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ANNUAL REPORT

OF THE

CANAL COMMISSIONERS

OF THE

STATE OF NEW YORK.

TRANSMITTED TO THE LEGISLATURE JANUARY 12th, 1870.

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STATE OF NEW YORK.

No. 4.

IN ASSEMBLY,

January 4, 1870.

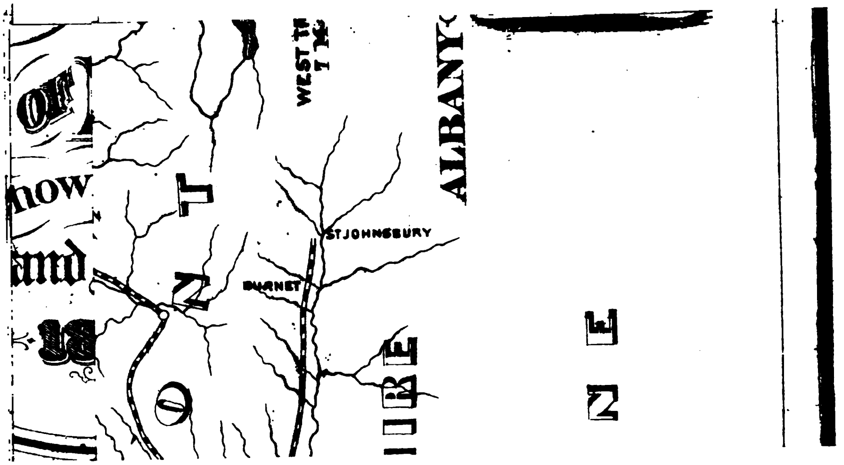
ANNUAL REPORT
OF THE CANAL COMMISSIONERS.

STATE OF NEW YORK:
CANAL COMMISSIONERS' OFFICE,
ALBANY, *January* 4, 1870.

To the Honorable the Legislature of the State of New York:

The undersigned herewith transmit their respective reports as Canal Commissioners, for the year ending the 30th day of September, 1869.

Very respectfully,
STEPHEN T. HAYT,
JOHN D. FAY,
GEORGE W. CHAPMAN,
Canal Commissioners.


OF
now
and
WEST
ALBANY
ST JOHNSBURY
BURNET

ANNUAL REPORT.

At the beginning of the present year the Board of Canal Commissioners consisted of R. C. Dorn, president, whose term of office expired on the 31st day of December, 1868; S. T. Hayt, whose term of office will expire on the 31st day of December, 1869, and John D. Fay, whose term of office will expire on the 31st day of December, 1870.

On the 1st day of January, 1869, the Board consisted of S. T. Hayt, John D. Fay and Oliver Bascom. It was reorganized by the election of S. T. Hayt president, and Oliver Bascom secretary.

To Oliver Bascom was assigned, in special charge, the Eastern Division of the canals, which is made up as follows:

	Miles.
Erie canal, from Albany to east bank of the Oneida Lake canal	136
Champlain canal	66
Glen's Falls feeder	12
Pond above Troy dam	3
Black River canal and Black River improvement	98

To S. T. Hayt was assigned, in special charge, the Middle Division of the canals, which embraces the following:

	Miles.
Erie canal, from the east bank of the Oneida Lake canal to the county line between Seneca and Wayne counties, including the several feeders and reservoirs	76
Chenango canal, feeders and reservoirs	97
Chenango canal extension, now under contract for construction	30
Oswego canal	38
Oneida Lake canal	7
Oneida river improvement	20
Seneca river towing-path	5¾
Cayuga and Seneca canal	23
Cayuga inlet	2
Crooked Lake canal	8
Chemung canal	23
Chemung canal feeder	16
Seneca river improvement	12¼

To John D. Fay was assigned, in special charge, the Western Division of the canals, which embraces the following:

	Miles.
Erie canal, from the county line between Seneca and Wayne counties, to Buffalo, including the Main and Hamburg streets canal, slip and basin at the latter place	155
Genesee Valley canal	118
Extension of the Genesee Valley canal	7

EASTERN DIVISION.

CANAL COMMISSIONERS' OFFICE,
ALBANY, *December 15th*, 1869.

To the Honorable the Legislature of the State of New York:

I have the honor herewith to submit, for the fiscal year ending September 30th, 1869, the annual report of the Hon. Oliver Bascom, deceased, late Canal Commissioner, in charge of the Eastern Division.

The office of Canal Commissioner became vacant by his death, on the 7th day of November, 1869. The undersigned was appointed by His Excellency the Governor, on the 11th day of November, 1869, to fill the vacancy thus occurring, until the 1st day of January, 1871.

On the same day, at a meeting of the Board of Canal Commissioners, the following resolutions were unanimously adopted:

By Mr. Fay.

Whereas, It has pleased Almighty God to remove from us the Hon. Oliver Bascom, Canal Commissioner of the State, who departed this life at his residence in Whitehall, on the morning of the 7th instant, therefore

Resolved, That in the death of Mr. Bascom the State has lost the services of a high toned, honorable man and a valuable public officer, the community a highly esteemed and much respected citizen, and the members of this Board a gentlemanly, kind, and valuable associate.

Resolved, That the members of this Board deeply sympathize with the surviving members of his family in their sad bereavement, and can only point them to Him, who disposes all things well, as their highest source of consolation now, and of hope in the future.

Resolved, That the clerk of this Board furnish a copy of the foregoing preamble and resolutions to the family of the deceased.

Respectfully submitted.

GEORGE W. CHAPMAN,
Canal Commissioner, Eastern Division.

REPORT OF OLIVER BASCOM, CANAL COMMISSIONER.

Pursuant to the provisions of the Revised Statutes, the Commissioner in charge of the Eastern Division of the New York State canals has the honor herewith to submit his first annual report for the fiscal year, ending September 30th, 1869:

The Eastern Division comprises that portion of the Erie canal extending from the south end of the Albany basin to the east bank of the Oneida Lake canal at Higginsville, including also the Champlain and Black river canals, together with all feeders, dams, side-cuts, and reservoirs connected therewith. Its aggregate length being three hundred and seven miles, exclusive of unnavigable feeders, which give an additional length of five and sixty-eight hundredth miles. It is divided into eleven superintendent or repair sections; the Erie canal into five, and the Champlain and Black river canals each into three.

ERIE CANAL.

SECTION No. 1.

THOMAS KEARNEY, *Superintendent.* THOMAS GALE, *Assignee of William C. Stephens, Contractor.*

Extends from the south end of the Albany basin to the west end of the lower Mohawk aqueduct, including the West Troy and Port Schuyler side-cuts. The Troy dam, sloop lock, and pond above, and that portion of the Champlain canal extending from its junction with the Erie at West Troy, to a point two hundred feet north of the head of south guard lock at Cohoes, making a total length of nineteen miles.

The structures upon this section are forty-three locks, including two weigh locks, one at Albany, and the other at West Troy; one hundred and seventy-two lock gates; twenty culverts; ten road bridges (wood); two towing-path bridges (wood); one towing-path bridge (iron); one aqueduct; six waste-weirs; one work shop; and two timber sheds.

The repairs upon this section have been done by the repair contractor in charge. During the spring the prism was thoroughly cleaned out, and a large amount done of other work, essential to the maintenance of good navigation, such as inserting a number of new lock gates, repairing docking, wall, &c. The weigh lock and houses at Albany, and those at Troy, also were put in good shape for the season.

During the year no breaks or detentions of any consequence have occurred on this section.

SECTION No. 2.

ABRAM VEDDER, *Superintendent.* SAMUEL DONALDSON, *Contractor.*

Extends from the west end of the lower Mohawk aqueduct to the upper end of lock No. 27; and is thirty-two miles in length. The structures on this section are eighteen locks; seventy-two lock gates, one guard lock; one work shop and timber shed; one dam; nineteen culverts; six lock houses; twenty road bridges (wood); three road bridges (iron); three aqueducts; two waste-weirs; sixteen farm bridges; two towing-path bridges, and one swing bridge.

The repairs in this section necessary to be done in the spring were quite extensive; some sixteen new lock gates and valves, two new bridges in place of old ones, and other similar repairs were made. The prism of the canal was not quite as thoroughly cleaned out as was desirable, but, notwithstanding, fair navigation has been maintained during the season. Some of the locks on this section need careful examination in the spring, with a view to making their foundations secure by concreting, or otherwise, as may be necessary.

During the year only one break occurred on this section; that was on the 11th day of November, through the towing-path bank, at a point seven miles west of Schenectady. It was caused by a very heavy rain, during which the water ran over the tow-path, creating a breach, which was repaired after three days delay. A few spillways properly located on this section would be of great service.

SECTION No. 3.

JAMES SHANAHAN, *Superintendent.* REED AND MORRELL, *Assignees of D. and A. Z. Neff, Contractors.*

Extends from the head of lock No. 27 to the foot of lock No. 34, and is thirty-seven miles in length.

The structures on this section are fourteen lift locks; three guard locks; ten aqueducts; twenty-nine culverts; five waste-weirs; thirty-one farm bridges; eighteen road bridges (wood); six road bridges (iron); one wire suspension bridge at Fort Plain; two dams; two workshops, and three lock-houses.

The usual spring repairs were satisfactorily made, and the prism of the canal well cleaned out. The aqueducts and other mechanical structures were, as a general thing, put in very good repair. The foundation of the lock at Fort Plain being found in an unsafe condition, the floor planks were removed and the bottom well concreted, at quite an expense to the contractors. Several new lock gates and valves were also inserted.

During the year navigation on this section has been very good, and there have been no delays of any consequence, with the exception of those of October 11th, and August 26th, at the culvert about two miles east of St. Johnsville. It required about four days each time to repair the culvert and restore navigation. Although great care was exercised, and pretty thorough repairs made the last time, yet I am of the opinion that before the opening next spring, this culvert should be entirely uncovered and examined, with a view of putting it in a perfectly safe condition.

SECTION No. 4.

R. C. PETRIE, *Superintendent.* PETERSON *and* HOSCH, *Assignees of C. F. Braman, Contractors.*

This section extends from the foot of lock No. 34 to the head of lock No. 45, and is thirty-one miles in length.

The structures on this section are twenty-four lift locks; one guard lock; four aqueducts; seven waste-weirs; ten culverts; twenty-four farm bridges; eleven road bridges (wood); two road bridges (iron); one tow-path bridge (wood); one swing bridge (wood); one dam; one feeder with bulkhead; two feeders with guard locks; eight lock houses; two work shops; twelve watch houses, and one collector's office. This section was under contract for repairs at a price per annum of $23,590 up to May 1st, when it was surrendered and let again to the present contractors at $34,800 per annum.

Before the opening in the spring, extensive repairs were made. Some thirty new lock gates were inserted, the trunk to aqueduct across the Mohawk river at Little Falls was partially renewed, and put in good shape, and quite a number of bridges repaired, some old ones being replaced with new superstructures. The prism of the canal was well cleaned out so that as a general thing good navigation has been maintained.

On the 23d of July the foundation of lock No. 35 became so leaky and the lock gates operated so imperfectly that it was decided to draw the water and if possible obviate the difficulty. On examination the foundation of the lock was discovered to be in a bad condition; hence the floor planking was removed and the bottom thoroughly concreted, other necessary repairs were also made. It required four days to do the work, and the lock afterwards operated well. Similar trouble was experienced in August at lock No. 41, at the cost however of but one day's delay. Some of the other locks on this section need examining and doubtless concreting; one of these is lock No. 34. The towing-path above this lock for a distance of at least two hundred feet is very low and should be raised, and the inner face of bank removed at least three feet to facilitate the passage of boats into and out of the lock.

At a point near Finck's Basin the canal bottom, which is rock, is apparently high for about one hundred feet; it is the cause of some trouble on account of boats grounding, and should be removed. The tow-path for about twenty chains east of lock No. 36 is not high enough to prevent the river, in times of freshets, flowing over into the canal. It should be raised for at least that distance and paved to protect it and the vertical wall on the inner face.

The collector's office at Little Falls is in a very dilapidated condition and should be removed and a new one built. During heavy rains, the old one has been so leaky as to endanger the books and papers belonging to the office.

Two new "tumble gates" have been inserted into lock No. 37, and demonstrate very satisfactorily their superiority over the mitre gate. It would add greatly to the facilities of navigation could this style of gate be put into all locks at the foot of short levels.

SECTION NO. 5.

GILES HAWLEY, *Superintendent.* JOHN F. HOSCH, *Assignee of P. H. Hosch, Contractor.*

Extends from the head of lock No. 45 to the east bank of the Oneida Lake canal, at Higginsville, and is thirty-four miles long. The structures upon it are: one lift lock; one weigh lock; four aqueducts; twenty-nine culverts; twenty-three farm bridges (wood); six farm bridges (iron); eighteen road bridges (wood); eighteen road bridges (iron); one towing-path bridge; one foot bridge (wood); two foot bridges (iron); two lock houses; two work shops; one watch house; one collector's office at Utica.

This section was under contract for repairs, at a price per annum of $16,500, up to June 15th, when it was surrendered and remained in charge of the superintendent until September 15th. It was then let for $18,900 per annum.

During the spring the bottoming out of the canal, on this section was not as extensive as it should have been owing to excessive rains and continued high water in the Mohawk river through the month of April. Navigation, however, has been very good, and no detentions have occurred, except from causes off the section. The partial removal of original material from the bottom of the canal near Oriskany, authorized by act chapter 877, Laws of 1869, has added very much to the facilities of navigation on this section. About half of the appropriation has been expended, and a proportionate amount of the work done. It would have been completed last spring but for the high water. The remainder should be finished next spring, before the opening, in order that the benefits of this long needed improvement may be fully felt. This serious obstruction to navigation on the long level should have been removed years ago. It has doubtless been the cause of heavy losses to the State, in tolls, as well as to forwarders in delays.

After the breaking away of the north branch reservoir on the 21st of April last, serious apprehensions were felt lest the supply of water during the summer season would be short, and great embarrassment follow. But such has not been the case; the supply has been equal to the demand, and no trouble has been experienced from that source.

CHAMPLAIN CANAL.

This canal, commencing at its junction with the Erie at West Troy, extends to Lake Champlain, at Whitehall, including the Glen's Falls feeder, and is divided into three superintendent or repair sections. Its length, including that portion assigned to section No. 1 of the Erie, is seventy-six miles.

SECTION No. 1.

GEORGE L. AMES, *Superintendent.* JAMES A. WILSON, *Contractor.*

Extends from a point two hundred feet north of the south guard lock at Cohoes, to the foot of the first lock north of Saratoga dam, and is twenty-eight miles in length. The following are the structures upon it: nine lift locks; two guard locks; one weigh lock; one aqueduct; eleven waste-weirs; eight culverts; two workshops; one collector's and weigh office; one timber shed; two dams (one across the Hudson and one across the Mohawk); two store houses; forty farm bridges (wood); thirty road bridges (wood); two road bridges (iron); nine towing-path bridges; six lock houses; three watch houses, and eight foot bridges.

The repairs on this section during the year have been extensive, and of a general character. Several bridges have been rebuilt and repaired, including the masonry in the abutments.

This section was under contract at a price per annum of $29,400 up to July 1st, when, under chapter 252 of the Laws of 1864, it was surrendered. From that time it was in charge of the superintendent to September the 15th, when it was again put under contract at $22,470 per annum. A new iron bridge has been constructed at Schuylerville. Becker's lock has also been rebuilt on the enlarged plan, with a tumble gate at the head. Much credit is due the contractor, not only for the substantial character of the work, but also for the energy with which he entered upon and prosecuted it, and the promptness with which he had it ready for navigation in the spring.

During the fiscal year no detentions from breaks have occurred on this section.

At the three locks just above Waterford, during the busy season of the year, there are constant, and under the circumstances, unavoidable delays. The shortness and shallowness of the levels, and the nearness of the locks to each other, are the cause of this trouble. If possible, this should be remedied by reconstructing the upper and lower locks on the enlarged size, and of such lifts as to dispense with the middle one. The level thus lengthened should then be correspondingly enlarged.

During the great freshet in April last, about one hundred and twenty-five feet of the Saratoga dam went out. This had to be repaired during the high water, to open and maintain navigation. It was successfully done without causing any delay, but at quite an expense.

SECTION No. 2.

GEORGE B. SHERRILL, *Superintendent.* H. S. PRATT, *Contractor.*

Extends from the foot of the first lock north of Saratoga dam to a point thirty-three feet south of the road bridge at Dunham's basin, including the Glen's Falls feeder, and is twenty-five miles long.

The structures upon it are nineteen locks; seventeen waste-weirs; seventeen farm bridges (wood); nineteen road bridges (wood); two road bridges (iron); three towing-path bridges; one work shop; one dam (nine hundred feet long) at head of Glen's Falls feeder; three aqueducts; eight culverts; ten lock houses.

During the spring the repairs on this section were quite extensive, but not as much so as its necessities required. The April freshet damaged it very much and subjected the contractor to a heavy expense which otherwise he would have escaped. But for that freshet and the brief space of time to make the repairs the section would have been put in fair condition for the season. At several points the towing-path has been raised and improved, but in other places it is still too low and greatly in need of similar attention. Some new bridges have taken the place of old ones; a new iron bridge has been built at East street, in the village of Fort Edward, and an aqueduct on the enlarged size has been constructed at the same place, in lieu of the culvert that was carried away last fall. The bevels from one side of all the Glen's Falls feeder locks have been removed.

No detentions from breaks have occurred on this section.

SECTION No. 3.

GEORGE NORTHUP, *Superintendent.* RYAL G. BRIGGS, *Contractor.*

Extends from a point thirty-three feet south of the road bridge at Dunham's basin to a point three hundred feet north of the foot of the combined locks at Whitehall, and is twenty-two miles long.

The structures are eight locks; three culverts; five waste-weirs;

seven road bridges; twenty farm bridges; four towing-path bridges; four dams on Wood creek and four lock houses.

The usual spring repairs were very well done on this section and during the summer some of the old bridge superstructures have been replaced with new ones. The towing-path throughout its entire length has been raised and improved. The raising and paving of the towing-path on Wood creek is about completed and adds much to the facilities to navigation. Owing to the spring freshets and the lateness of the season when the work was commenced, the improvement of the narrows was not completed; the remainder will be finished this winter.

During the fiscal year one break occurred on this section on the 5th day of October, 1868, which caused a delay of two days. About sixty feet of the berme bank went out some six feet below canal bottom. The cause of it was undoubtedly a hole made through the bank by a muskrat. The bank is built of a very light sandy loam, and easy to bore through. Within the past ten years several breaks from the same cause have occurred at this place, and it would be well to remedy this, either by putting in the center of the bank for its whole length, a course of sheet piling, or a light concrete wall extending from top of bank down two or three feet. The expense would be trifling in comparison with the cost of repairing breaks.

BLACK RIVER CANAL.

This canal extends from Rome to Lyon's Falls, a distance of thirty-six miles; and there are connected with it, and forming part of i navigable length, the Delta feeder, one and a quarter miles long Booneville feeder, ten and a half miles; the river above Forest Po dam two miles; improvement of the Moose river above Lyon's Fall one and a half miles, and the improvement of the Black river, forty-two and a half miles, making a total navigable length of ninety-three and three-quarter miles; and is divided into three superintendent or repair sections as follows:

SECTION No. 1.

JOHN COLE, *Superintendent.* WILLIAM MCARTHUR, *Contractor.*

Extends from the junction of the Black River canal with the Erie canal at Rome to a point on the summit level, one thousand feet north of lock No. 70, and is twenty-four miles in length.

The following are the structures on this section: Seventy lift locks; one guard lock; ten culverts; two draw bridges across Delta feeder; nineteen lock houses; six aqueducts (one over old line of Rome and Ogdensburgh railroad); eighteen farm bridges; two farm bridges owned and maintained by individuals; one dam across Lansing Kill; five waste-wiers; fifteen road bridges; two road and change bridges.

Owing to the great damage done this canal by the freshet of the 21st of April, some two weeks before the time advertised for the opening, this section was not ready for navigation until about the first day of June. Six breaches were made through the south bank of Delta feeder by the high water in the Mohawk, one at the head of, and around each of locks Nos. 26, 27 and 28, respectively. Those at the head of the locks were occasioned by the excessive rush of water from the adjacent hills, bringing with it all manner of *debris* in such quantities as to entirely fill up a culvert above lock No. 28. Being thus arrested, it arose and broke over into the canal, causing those three heavy breaches. At other points much damage was also done to the section. A guard bank properly built between the Mohawk river and the Delta feeder would prevent a recurrence of such damages to this feeder, except perhaps in cases of extraordinary floods. On the first day of November, 1868, another break occurred just below lock No. 47, which took some eight days to repair.

SECTION No. 2.

R. SANFORD MILLER, *Superintendent.* ARCH. McARTHUR, *Contractor.*

Extends from a point on the summit level, one thousand feet north of lock No. 70, to the Black river, at Lyons Falls, a distance of twelve miles. It includes the Booneville feeder to Forrest Port, a distance of ten and a half miles, also the river above the dam at Forrest Port, two miles, and the Moose river improvement, one and a half miles above the dam at Lyons Falls. The Woodhull north and south branch reservoirs are also included in this section.

The following are the structures: Thirty-nine lift locks; one guard lock; thirteen lock houses; one aqueduct; six waste-weirs; ten culverts; two dams; fifteen road bridges (wood); one road bridge (iron); twenty-two farm bridges; one farm and change bridge; one road and change bridge; and one towing-path bridge.

The damages done to this section by the freshets of April were similar to those on section No. 1, only much more extensive. The embankment at the north end of Forrest Port dam was swept away for one hundred and thirty feet in length and thirty feet in depth, to the rock, so that the entire river passed around the end of the dam. The heavy embankment, bulkhead and culverts at north branch reservoir were also swept out. Timely attention to the latter might possibly have saved it from destruction, but it is a question of great doubt in my mind whether it could have been done in the midst of such a sudden and excessive flow of water.

All repairs necessary to commence navigation on the 1st of June were promptly made by the repair contractor, and the others, upon which navigation was not dependent, were afterward completed. The repairs to north branch have been in progress all summer, and the reservoir is being reconstructed on a somewhat different and much more substantial plan. The old chute has been abandoned, and a new natural one will be constructed at south end of reservoir. The whole will be completed this fall, and ready for use next season.

Woodhull reservoir will need attention before long; and when reconstructed, all the wood work about it should be dispensed with, and iron tubes substituted.

SECTION No. 3.

ALEXANDER BROWN, *Superintendent.* ISRAEL G. WOOD, *Contractor.*

Extends from Lyons Falls to Carthage, a distance of forty-two miles; it includes the Black river improvement. The following are the structures on it: One road bridge at Carthage (iron); one draw-bridge at Beach's; one at Illingsworth; one at Carter's; one at Tiffany's; one dam at Carthage; one lock and dam above Beach's bridge; and a lock and dam at Otter creek.

During the season the work of repairs on this section has consisted mainly of dredging. Large quantities of tan bark, brought in from streams tributary to the river, have been dredged out, which, but for the favorable season, would, for a part of the time, have suspended navigation on the river. Some legislation is necessary to arrest the flow of tan bark into this valuable stream. Should the next season be dry, it will require two or three dredges all the time to keep up navigation.

IMPROVEMENT OF THE CHAMPLAIN CANAL.

With the exception of that on Wood creek, no very considerable amount of work has been done the past year. It is to be hoped that the work under contract will progress more satisfactorily the coming winter and spring. The docking, walls and tow-path bank most of the distance from the Hudson river to Fort Ann, and from the guard lock on Wood creek to Whitehall, are in a very bad shape, and the only remedy is the removal of all the old, ragged docking, and the construction of slope wall and raising the towing-path to a proper height and lining it with good material. It is hoped that much of the work will be done before the opening of navigation next spring.

The annexed table, No. 1, exhibits the state of the work under contract at original estimates.

The account of the work, including the raising and paving of the towing-path on Wood creek, and the funds thus far appropriated, will stand as follows:

Work done by superintendents, 1864...	$8,268 27	
" " " 1865....	22,959 61	
" " " 1866...	39,617 39	
" " " 1867...	1,639 98	
		$72,485 25
Work done by repair contractor, 1865..	$10,066 33	
" " " 1866..	25,389 72	
		35,456 05
Work done on contract in 1865........	$46,909 74	
" " " 1866........	94,965 87	
" " " 1867........	219,901 78	
" " " 1868........	50,673 50	
" " " 1869........	82,480 00	
		494,930 89
Engineering in 1864...................	$491 55	
" " 1865...................	2,266 72	
" " 1866...................	10,030 12	
" " 1867...................	15,652 76	
" " 1868...................	10,045 50	
" " 1869...................	8,975 04	
		47,461 69
Miscellaneous expenses up to Sept. 30th, 1867.......		326 85
Total expenses..................................		$650,660 73
Estimated cost to complete work under contract	$77,180 00	
Estimated cost to complete work not under contract	65,000 00	

Amount for engineering...............	$14,000 00	
		$156,180 00
		$806,840 73

APPROPRIATIONS.

By act chapter 186, Laws of 1864......	$295,000 00	
" " 156, " " 1866......	247,500 00	
" " 715, " " 1868......	95,700 00	
" " 877, " " 1869......	111,800 00	
		750,000 00
Deficiency....................................		$56,840 73

In the last appropriation is included the amount for finishing the raising and paving of towing-path on Wood creek, and raising the road bed adjacent thereto to the same height, and improving the "narrows." At the time this work was put under contract, it does not appear that slope wall on the tow-path side laid up from the bottom was contemplated, and, to do this, the cost to complete the work as it should be will be very materially increased.

During the fiscal year navigation on the Eastern Division has been very good, under the circumstances, and careful attention has been given to their sections by the respective persons in charge. Under the present system of repairs, constant care and embarrassments are the portion of the Commissioner, and I am so fully sensible of this fact that I most cheerfully join all my predecessors in recommending the repeal, at the earliest day possible, of the law authorizing the repairs of the canals by contract. It should certainly be done for the benefit of the State, the forwarders, the boatmen, and in short for the advantage of everybody and everything doing business upon or having any connection whatever with the canals.

Respectfully submitted.

OLIVER BASCOM,

Canal Commissioner, Eastern Division.

STATEMENT No. 1.

Showing the Expenditures of the Commissioner on the respective Sections of the Canals embraced in the Eastern Division.

ERIE CANAL.

Repair Section No. 1.

For compensation of repair contractor	$70,000 00
" dredging Albany basin	72,801 00
" construction stone dam at Cohoes	46,359 00
" repairs of State dam at Troy	13,687 22
" removing slope wall and wall benches	36,295 00
" construction of Lock No. 2	714 00
" engineering per Commissioner Dorn	2,500 00
" miscellaneous per Commissioner Dorn	1,254 38
" lock tending per Commissioner Dorn	1,300 00
" part salary of Commissioner	400 00

Miscellaneous Expenditures.

Albany Argus Co., printing	382 15
Troy Daily Press, printing	42 18
Mohawk Valley Democrat, printing	31 50
Newcomb & Co., stationery	67 00
Pease & Prentiss	22 20
Albany post office, box rent and stamps	89 15
Whitehall post office, stamps &c	3 00
W. U. Telegraph Co. (Albany)	98 97
American M. U. Express Co	91 00
National Express Co	7 00
Mrs. Stevens, cleaning office	3 00
Mrs. Stevens, cleaning office	10 50
S. H. Alexander, payment dredge crew	566 80
O. P. Pinchon, repairing dredge	9 10
J. C. Patterson, labor on dredge	5 00
Sampson, Davenport & Co., City Directory	2 00
W. B. Cooper, assistant engineer	651 00
W. H. Printup, assistant engineer	395 00
Geo. Cushing, Jr., assistant engineer	980 00
John A. Cooper, assistant engineer	655 00
E. H. Ball, assistant engineer	814 50
R. J. Cantwell, assistant engineer	355 50
W. H. Newkirk, office assistant	728 00
A. H. Holbrook, rodman	156 00
J. M. Clements, rodman	67 50
L. M. Clements, inspector	136 00
Hiram Parker, inspector	316 00
Dana Reed, inspector	632 00
John A. Allen, leveler	87 00

B. H. Brevoort, assistant engineer	$832 00
Robine Hathaway, inspector	200 00
M. Campion, rodman	104 00
Thomas Foley, inspector	208 00
C. D. Burroughs, draftsman	143 00
W. B. Coleman, rodman	482 50
James Doren, furniture	77 00
T. C. Jeffers, inspector	420 00
George F. Oliver assistant engineer	395 00
C. M. Thompson, office assistant	234 00
F. J. Harris, rodman	130 00
George Howe, inspector	25 00
Oliver Bascom, traveling expenses	100 00
Salaries	498 54
Total, section No. 1	$256,563 69

Repair Section No. 2.

For compensation of repair contractor	$19,309 99
" removing slope wall, &c	31,926 75
" construction bridge, Rexford's Flats (Commissioner Dorn)	700 00
" repairing breaches (Commissioner Dorn)	7,045 55
" apron to Schoharie creek dam (Commissioner Dorn)	2,907 00
" part salary of Commissioner	400 00

Miscellaneous Expenditures.

Albany Argus Company, printing	196 88
Plattsburgh Republican, printing	43 20
Pease & Prentiss, stationery	91 21
E. H. Bender, stationery	355 22
C. Snell, appropriation of gravel	75 00
E. H. Ball, leveler	477 00
John A. Allen, leveler	126 00
C. M. Thompson, rodman	318 00
Robine Hathaway, inspector	212 00
George Cushing, Jr., assistant engineer	395 00
S. H. Alexander, payment dredge crew	462 00
Salaries	498 54
Total section No. 2	$65,539 34

Repair Section No. 3.

For compensation of repair contractor	$27,000 00
" construction iron bridge at Port Jackson	4,900 00
" construction drain at Fort Plain	1,020 00
" part salary of Commissioner	400 00

Miscellaneous Expenditures.

Albany Argus Company, printing	$1,218 40
Salaries	498 54
Total section No. 3	$35,036 94

Repair Section No. 4.

For compensation of repair contractor	$23,627 43
" inserting two tumble gates, lock No. 37	5,000 00
" part salary of Commissioner	400 00

Miscellaneous Expenditures.

Albany Argus Company, printing	456 72
Schenectady Evening Star, printing	134 93
Herkimer County Democrat, printing	73 68
Rome Sentinel, printing	31 50
Saratoga Sentinel, printing	31 50
Plattsburgh Republican, printing	92 75
Utica Daily Observer, printing	31 50
Salem Press, printing	31 50
Albany County Democrat, printing	31 50
Fort Edward Gazette, printing	31 50
Ballston Democrat, printing	31 50
Whitehall Times, printing	92 75
R. C. Petrie, labor on lock No. 39	811 86
Salaries	498 54
Total, section No. 4	$31,409 16

Repair Section No. 5.

For compensation of repair contractor	$13,309 15
" removing slope wall at Rome	2,575 00
" survey of Fish creek feeder	3,500 00
" engineering on improvement	250 00
" part salary of Commissioner	400 00

Miscellaneous Expenditures.

Albany Argus Company, printing	18 22
John F. McQuade, rodman	67 50
John O'Hara, inspector	212 00
B. B. Holman, axman	4 50
John M. Peters, sundries	6 00
Giles W. Hawley, removing bottom at Oriskany	1,015 25
E. C. Schemerhorn, work on bridge at Utica	50 00
C. L. Phelps, assistant engineer	40 00
F. Henry, repairing office at Utica	24 50

Metcalf & Dearing, repairing office at Utica	$53 08
R. J. Cantwell, assistant engineer	238 50
Salaries	498 55
Total, section No. 5	$22,262 25

ERIE ENLARGEMENT.

For awards of appraisers	$816 00
" miscellaneous (by Commissioner Dorn)	376 50
Total	$1,192 50

CHAMPLAIN CANAL.

Repair Section No. 1.

For compensation of repair contractor	$16,967 32
" construction iron bridge, Schuylerville	6,807 31
" construction bridge at Waterford	1,899 50
" construction bridge Mechanicsville	850 00
" construction road bridge, Schuylerville (Comissioner Dorn)	1,297 40
" improvement from Moses Kill lock to Fort Edward lock, per contract	544 00
" award of appraisers, Waterford	50 00
" engineering	2,533 34

Miscellaneous Expenditures.

Albany Argus Co., printing	150 70
E. McKinney, land damages	300 00
Whitehall post office, stamps, &c	6 00
John F. Pruyn, land damages	500 00
George F. Oliver, assistant engineer	1,040 00
John A. Cooper, assistant engineer	650 00
M. H. Roberts, assistant engineer	316 00
W. H. Newkirk, office assistant	108 00
W. B. Cooper, assistant engineer	150 00
M. McNaughton, inspector	154 00
John Somers, inspector	156 00
C. Van Derkar, inspector	308 00
George Strover, temporary use of land	25 00
William Cain, rigging for dredge	38 24
Geo. A. Hall, sundries for dredge	20 62
W. U. Telegraph Co	19 75
S. H. Alexander, payment dredge crew	568 07
Clute Brothers, repairs of dredge	70 96
Craw & Dennis, repairs of dredge	31 33
W. J. Simmons & Co., wood for dredge	69 25
Dana Reed, inspector	208 00

A. Renois, office rent	$75	00
George Odell, rodman	52	00
Oliver Bascom, traveling expenses	200	00
Miscellaneous expenditures (by Commissioner Dorn)	1,266	00
Total section No. 1	$37,431	79

Repair Section No. 2.

For compensation of repair contractor	$24,900	00
" repairs, extra	883	09
" rebuilding Becker's lock	28,903	01
" constructing aqueduct at Fort Edward	30,809	00
" constructing bridge at Fort Edward	2,261	00
" constructing iron bridge at Fort Edward	3,000	00
" repairing breaches at Fort Edward (by Commissioner Dorn)	28,436	23
" repairing collector's office at Fort Edward	311	86
" improvement from Moses Kill lock to Fort Edward lock	2,023	00
" improvement from Moses Kill lock to Fort Edward lock (by Commissioner Dorn)	799	00
" engineering	3,158	32

Miscellaneous Expenditures.

James Savage, land damages	99	00
E. Woodard, labor on break at Fort Edward	61	25
John Garity, land damages at Fort Edward	100	00
Mary H. Hagan, land damages, Fort Edward	280	00
Barney Tool, land damages, Sandy Hill	131	40
W. B. Cooper, assistant engineer	265	00
John Somers, inspector	316	00
J. R. Gandell, foreman	112	00
Clute Bros., repairs dredge	244	83
Geo. B. Sherrill, labor on Glen's Falls feeder	816	94
Geo. B. Sherrill constructing bridge, Fort Edward	1,106	97
W. F. Potter, rodman	65	00
Total for section No. 2	$129,082	99

Repair Section No. 3.

For compensation, repair contractor	$17,750	00
" raising and paving towing-path on Wood creek,	35,292	00
" raising and paving towing-path on Wood creek, (by Commissioner Dorn)	6,953	00
" widening and deepening narrows, Wood creek	2,414	00
" raising road bed adjacent to towing-path on Wood creek	4,828	00

For dredging Whitehall basin	$2,414 00
“ lining towing-path, Whitehall level	2,822 00
“ difference in cost of bridge at guard lock	974 92
“ construction of farm bridge, Fort Ann	357 00
“ improvement twelve mile level	6,168 00
“ engineering	2,533 34

Miscellaneous Expenditures.

Whitehall Times, printing	13 50
Fort Edward Gazette, printing	12 15
George Brett, use of land	213 28
Whitehall post office, box rent, &c	3 00
Albany Argus Company, printing	12 48
Total for section No. 3	$82,760 67

Supplementary—Champlain.

For extra work not embraced in contract, rebuilding pier under towing-path bridge over Mohawk river, Cohoes, (by Commissioner Dorn)	$4,369 16

BLACK RIVER CANAL.

Repair Section No. 1.

For compensation, repair contractor	$16,440 00
“ enlarging and deepening first level, Rome	1,683 00
“ engineering	114 44

Miscellaneous Expenditures.

R. J. Cantwell, assistant engineer	463 50
C. L. Phelps, assistant engineer	264 00
J. F. McQuade, rodman	60 00
C. B. Wild, rodman	26 00
John O'Hara, inspector	96 00
Total section No. 1	$19,146 94

Repair Section No. 2.

For compensation, repair contractor	$7,980 00
“ repairs of breach in reservoir	58,926 46
“ awards of appraisers	175 00
“ difference in cost of iron bridge at Port Leyden	3,139 22
“ engineering	125 00

Miscellaneous Expenditures.

Luce & Gilmore, printing	43 20
J. C. Richert, superintendent of reservoirs	200 00
G. W. Dawson, sup't of reservoirs, January, 1869	52 00

James Burnett, repairs Woodhull reservoir	$9 62
J. F. McQuade, rodman	65 00
L. L. Nichols, engineer on water survey, Black river	304 00
O. W. Nichols, leveler on water survey, Black river	88 00
C. L. Phelps, assistant engineer	528 00
Total, section No. 2	$71,635 50

Repair Section No. 3.

For compensation repair contractor	$6,761 40
" construction of lock and dam above Beach's bridge	14,002 00
Total, section No. 3	$20,763 50

RECAPITULATION

Of expenditures during fiscal year, showing amount expended upon each canal and each section of canal, as exhibited in detail in the preceding tables.

ERIE CANAL.

Section No. 1	$256,563 69	
Section No. 2	65,539 34	
Section No. 3	35,036 94	
Section No. 4	31,409 16	
Section No. 5	22,262 25	
Erie enlargement	1,192 50	
		$412,003 88

CHAMPLAIN CANAL.

Section No. 1	$37,431 79	
Section No. 2	129,082 90	
Section No. 3	82,760 67	
Supplementary	4,369 16	
		253,644 52

BLACK RIVER CANAL.

Section No. 1	$19,146 94	
Section No. 2	71,635 50	
Section No. 3	20,763 50	
		111,545 94
Grand total		$777,194 34

DRAFTS

Of Commissioner upon Comptroller for constructing a pier for protection of Albany Basin.

April 16, 1869, draft in favor of A. Robertson	$1,088 00
June 12, 1869, draft in favor of A. Robertson	2,091 00
July 7, 1869, draft in favor of A. Robertson	3,332 00
Aug. 10, 1869, draft in favor of A. Robertson	8,908 00
Sept. 14, 1869, draft in favor of A. Robertson	4,317 45
Total	$19,736 45

Certificates of the Commissioner addressed to the Auditor for awards of Appraisers.

ERIE CANAL.

Chauncey Lane, Dec. 10, 1868	$5,000 00

ERIE ENLARGED.

P. Rogers, Watervliet, Sept. 30, 1868	10,359 00
Henry James, Albany, Dec. 2, 1868	374 50
Albany Pier Co., Albany, March 27, 1869	10,663 75
Thos. J. Hunter, Albany, July 20, 1869	4,652 45
	$26,049 70

CHAMPLAIN CANAL.

Rhoda Cary, Fort Edward, Dec. 31, 1868	$116 93
P. Buckley, Fort Edward	483 00
	$599 93

BLACK RIVER CANAL.

Jas. D. Smith, Greig, Sept. 30, 1868	$56 25
T. J. Graves, Greig, Sept. 30, 1868	200 00
Edward Rees, Martinsburgh, Sept. 30, 1868	280 00
	$536 25

TABLE No. 1.

STATEMENT showing the length in miles, number of structures, estimated cost at contract prices, amount of work done for the fiscal year ending Sept. 30, 1869, whole amount of work done, and work completed or settled, with the characteristic detail of contracts existing upon the Eastern Division of the New York State Canals, for the fiscal year ending Sept. 30th, 1869.

EXTRAORDINARY REPAIRS—ERIE CANAL.

Work let by Canal Commissioners—Laws of 1868.

Length in Miles.	Number of structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept. 30, 1869.	Whole amount done.	Amount remaining to be done.
0.17	....	Removing slope wall and wall bench and constructing docking at Rome ...	$3,128 00	$3,030 00	$3,030 00	$98 00
....	1	Removal of iron bridge from Washington to George street, and constructing iron bridge at Washington street	11,900 00	....	....	11,900 00
....	1	Constructing apron to Schoharie Creek dam	5,690 82	2,270 82	5,690 82	Settled.
....	1	Iron bridge at Port Jackson	4,900 00	4,900 00	4,900 00	Settled.
....	1	Raising and repairing Troy dam	17,000 00	6,020 00	16,980 00	20 00
3.75	....	Removing slope wall and wall bench and constructing slope and pavement wall from lock 20 to a point one mile above upper Mohawk aqueduct	49,120 00	49,120 00	49,120 00	....
3.30	....	Removing slope wall and wall bench and constructing slope and pavement wall from lock 2 to Port Schuyler	34,360 00	34,360 00	34,360 00	....
....	1	Rebuilding lock No. 2	30,355 00	840 00	840 00	29,515 00
....	1	Iron chord bridge at lumber district (excess over old plan)	1,237 95	1,237 95	1,237 95	Settled.
		Laws of 1869.				
....	1	Culvert drain at Fort Plain	1,420 82	1,420 82	1,420 82	Settled.
....	1	Iron foot bridge at Utica	1,288 00	....	....	1,288 00
....	1	Iron side walk bridge at Cohoes	1,401 00	....	....	1,401 00
....	1	Iron bridge at Spraker's basin	1,657 00	....	....	1,657 00
....	1	Sluice at Cohoes guard lock	1,696 00	....	....	1,696 00
....	1	Iron bridge at Oneida street, Cohoes	2,807 00	....	....	2,807 00
....	1	Wooden bridge at Ilion	3,511 00	....	....	3,511 00
0.30	....	Wall bench and vertical wall at Utica	10,014 20	....	....	10,014 20
....	1	Upper lock at upper side-cut, West Troy	33,260 00	....	....	33,260 00
....	1	Lower lock at upper side-cut, West Troy	33,635 00	....	....	33,635 00
5.50	....	Removing wall bench, &c., from Port Schuyler to lower aqueduct	66,940 00	....	....	66,940 00
3.25	....	Removing wall bench, &c., from lower aqueduct to lock No. 20	23,405 00	....	....	23,405 00
3.75	....	Removing wall bench, &c., from lock No. 43 to lock No. 45	27,265 00	....	....	27,265 00

Table No. 1—(Continued).

Length in miles.	Number of structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept, 30, 1869.	Whole amount done.	Amount remaining to be done.
		Work done by Canal Commissioner.				
0.07	....	Removing slope wall and constructing vertical wall at Schenectady........	$2,805 76	$2,805 76	$2,805 76	Settled.
....	1	Inserting tumble-gates at lock No 37..	5,000 00	5,000 00	5,000 00	Settled.
0.30	....	Removing original bottom at Oriskany..	2,000 00	1,105 00	1,015 00	$985 00
		Work let by State Engineer and Canal Commissioners. Chap. 32, Laws of 1869.				
....	1	Pier at north end of Albany basin..	19,736 45	19,736 45	19,736 45	Settled.
		Total	$395,534 00	$131,757 20	$146,136 80	$249,397 20

EXTRAORDINARY REPAIRS CHAMPLAIN CANAL.

Length in miles.	Number of structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept, 30, 1869.	Whole amount done.	Amount remaining to be done.
		Work let by Canal Board.				
....	1	Stone dam at Cohoes (excess over wooden dam)............................	$50,000 00	$20,940 00	$50,000 00	
		Work let by Canal Commissioners.				
....	1	Rebuilding Becker's lock (excess over old plan)............................	9,578 50	9,578 50	9,578 50	Settled.
....	1	Iron bridge at Schuylerville (excess over old plan)........................	6,807 31	6,807 31	6,807 31	Settled.
....	1	Iron bridge at Fort Edward (excess over old plan)........................	3,000 00	3,000 00	3,000 00	Settled.
....	1	Bridge at McIntyre street, Fort Edward........................	2,723 00	2,660 00	2,660 00	$63 00
....	1	Farm bridge of G. F. Dudley..	622 00	420 00	420 00	202 00
....	1	Farm bridge of L. A. Weaver..	920 50	820 00	820 00	100 00
....	1	Road bridge at Mechanicsville..	1,000 00	1,000 00	1,000 00	
....	....	Dredging Whitehall basin..	10,000 00	6,600 00	6,600 00	3,400 00
....	1	Aqueduct at Fort Edward..	3,000 00	3,000 00	3,000 00	Settled.
		Work done by Canal Commissioner.				
....	....	Cutting out bevels from Glen's Falls feeder locks........................	2,575 82	816 94	2,575 82	
....	1	Bridge over discharge race at Waterford..	1,202 50	1,202 50	1,202 50	
		Work let by Canal Commissioners under chapter 877, Laws of 1869,				
....	1	Hewitt's lock (excess over old plan)..	17,000 00	2,140 00	2,140 00	14,860 00
....	1	Glen's Falls feeder locks (excess over old plan as per Engineer's estimate)..	10,000 00	....	....	10,000 00
....	1	Saratoga dam (excess over a wooden dam as per Engineer's estimate)......	47,000 00	....	....	47,000 00
....	1	Sluice at Saratoga guard lock..	3,588 00	....	....	3,588 00

0.20	....	Improvement Champlain canal at Schuylerville	2,449 00	....	....	2,449 00
....	1	Vertical wall and stop gate at Fort Edward	4,067 00	....	....	4,067 00
		Total	$175,528 63	$68,985 25	$89,804 13	$85,724 50

EXTRAORDINARY REPAIRS—BLACK RIVER CANAL.

Work let by Canal Board under Chap. 579. *Laws of* 1867.

....	....	Improvement first level at Rome	$4,600 00	$1,980 00	$3,260 00	$1,340 00
....	1	Iron bridge at Port Leyden (excess over old plan)	3,139 22	3,139 22	3,139 22	Settled.
		Total	$7,739 22	$5,119 22	$6,399 22	$1,340 00

IMPROVEMENT OF CHAMPLAIN CANAL.

Work let by Canal Commissioners under Chapter 186 *Laws of* 1864.

2.60	....	From Saratoga lock to Fort Miller lock	$20,236 00	$1,080 00	$6,340 00	$13,896 00
2.65	....	From Fort Miller lock to Moses Kill lock	21,395 00	1,000 00	10,480 00	10,915 00
5.50	....	From Moses Kill lock to Fort Edward lock	58,344 00	4,820 00	45,740 00	12,604 00
4.08	....	Section No. 2, 12 mile level	28,925 00	9,540 00	25,160 00	3,765 00
3.50	....	Section No. 3, 12 mile level	28,088 00	1,940 00	18,100 00	9,988 00
		Under Chapter 715 *Laws of* 1868.				
1.55	....	Raising towing-path on Wood Creek from lower lock at Fort Ann to the "Narrows,"	18,960 00	18,960 00	18,960 00	....
3.05	....	Raising towing-path on Wood creek from Parish lock to guard lock	36,260 00	33,020 00	36,260 00	....
		Under Chapter 877 *Laws of* 1869.				
4.00	....	Section No. 1, 12 mile level, raising and lining towing-path	1,372 00	....	....	1,372 00
5.50	....	Whitehall level	22,560 00	....	....	22,560 00
4.00	....	Raising road bed adjacent to towing path on Wood creek	11,000 00	9,280 00	9,280 00	1,720 00
....	....	Improving the Narrows on Wood creek	3,200 00	2,840 00	2,840 00	360 00
		Total	$250,340 00	$82,480 00	$173,160 00	$77,180 00

IMPROVEMENT BLACK RIVER CANAL.

Work let by Canal Commissioners under act Chap. 151 *Laws of* 1864.

....	1	Lock and dam above Beach's bridge	$64,917 10	$8,557 10	$64,917 10	Settled.
		Total	$64,917 10	$8,557 10	$64,917 10	

TABLE No. 2.

STATEMENT showing amount of work done under the supervision of the Engineer Department on repairs under contract and on extraordinary and miscellaneous repairs upon the Eastern Division of the New York State Canals, for the fiscal year ending September 30th, 1869.

ORDINARY REPAIRS UNDER CONTRACT—ERIE CANAL.

Length in Miles.	Number of Structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept. 30, 1869.	Whole amount done.	Amount remaining to be done.
....	1	Dredging Albany Basin	$51,420 00	$51,420 00	$51,420 00	....
		Total	$51,420 00	$51,420 00	$51,420 00	....

CHAMPLAIN CANAL.

Length in Miles.	Number of Structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept. 30, 1869.	Whole amount done.	Amount remaining to be done.
....	1	Stone dam at Cohoes (chargeable to repairs)	$38,262 50	$31,680 00	$31,680 00	$6,582 50
....	1	Becker's lock (chargeable to repairs)	19,824 51	19,324 51	19,324 51	Settled.
....	1	Iron bridge at Schuylerville (cost of old plan chargeable to repairs)	600 00	600 00	600 00	Settled.
....	1	Iron bridge at Fort Edward (cost of old plan chargeable to repairs)	748 95	748 95	748 95	Settled.
....	1	Saratoga dam (chargeable to ordinary repairs as per Engineer's estimate)	26,754 00	....	....	26,754 00
....	1	Glen's Falls feeder lock (chargeable to ordinary repairs as per Engineer's estimate)	15,128 00	....	....	15,128 00
....	1	Hewitt's lock (chargeable to ordinary repairs)	12,280 00	....	....	12,280 00
....	1	Aqueduct at Fort Edward (chargeable to ordinary repairs)	33,055 20	33,055 20	33,055 20	Settled.
		Total	$146,153 16	$85,408 66	$85,408 66	$60,744 50

BLACK RIVER CANAL.

Length in Miles.	Number of Structures.	CHARACTER OF WORK.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept. 30, 1869.	Whole amount done.	Amount remaining to be done.
....	1	Iron bridge at Port Leyden (cost of old plan chargeable)	$517 50	$517 50	$517 50	Settled.
		Total	$517 50	$517 50	$517 50	....

SUMMARY OF TABLES NOS. 1 AND 2.

NAME OF CANAL.	Estimated cost at contract prices.	Amount done during the fiscal year ending Sept. 30, 1869.	Whole amount done.	Amount remaining to be done.
Extraordinary repairs Erie canal	$395,584 00	$131,757 20	$146,136 80	$249,397 20
Extraordinary repairs Champlain canal	175,528 63	68,985 25	89,804 13	85,724 50
Extraordinary repairs Black River canal	7,739 22	5,119 22	6,399 22	1,340 00
Total	$578,801 85	$205,861 67	$242,340 15	$336,461 70
Improvement Champlain canal	$250,340 00	$82,480 00	$173,160 00	$77,180 00
Total	$250,340 00	$82,480 00	$173,160 00	$77,180 00
Improvement Black River canal	$64,917 10	$8,557 10	$64,917 10	....
Total	$64,917 10	$8,557 10	$64,917 10	....
Ordinary repairs Erie canal	$51,420 00	$51,420 00	$51,420 00	$60,744 50
Ordinary repairs Champlain canal	146,153 16	85,408 66	85,408 66	
Ordinary repairs Black River canal	517 50	517 50	517 50	
Total	$198,090 66	$137,346 16	$137,346 16	$60,744 50
Grand total	$1,092,149 61	$434,244 93	$617,763 41	$474,386 20

MIDDLE DIVISION.

The Commissioner in charge of the Middle Division respectfully presents his annual report for the fiscal year ending on the 30th of September, 1869.

For a detailed statement of expenditures, and other statistical information forming a part of this report, reference is made to the appendix.

The following is a summary of such detailed expenditures, and shows (1) expenditures for extraordinary repairs, authorized either by special acts of the Legislature or by resolution of the Canal Board; (2) the amount of expenditures for ordinary repairs, including payments to repair contractors, salaries and expenses of general management; (3) the amount expended for the reconstruction of locks on the Chenango and Crooked Lake canals; (4) the expenditures upon the extension of the Chenango canal; (5) the amount paid for construction work on the Oneida Lake canal; (6) the total amount paid on awards of the Canal Appraisers for land damages; and (7) for expenditures from General Fund:

Authorized by Legislature or Canal Board.

For balance on bridge at Higginsville	$2,213 68
For strengthening banks at Oneida creek aqueduct....	898 50
On account of culvert at Canastota.................	1,258 00
For use engine, lock No. 49, Erie..................	904 08
For vertical wall on Syracuse level................	5,999 97
For vertical wall at Geddes........................	1,805 85
For widening chambers of lock No. 49, Erie.........	14,873 40
For iron needle beams..............................	10,238 40
On account of protecting channel at Skaneateles lake outlet	5,193 30
On account of Otisco lake reservoir................	14,925 63
On account of improvement of Owasco lake outlet....	5,253 00
For wrought iron girder bridge across Skaneateles lake reservoir outlet..............................	4,500 00

On account of dam across Skaneateles lake feeder outlet,	$3,364	39
On account of docking at Liverpool................	2,026	00
On account of Minetto dam	21,828	00
On account of Phœnix dam........................	2,512	62
For raising banks at guard lock No. 2..............	4,000	00
On account of Braddock's rapids dam	25,113	12
On account of berme bank at Hinmansville..........	16,133	00
For State's part of iron bridge at Oswego	18,272	00
For dredging at Oswego	157	00
For piles at Oak Orchard	250	00
On account of raising bank on the Oswego canal	1,020	00
For construction of iron bridges....................	15,882	57
On account of rebuilding locks......................	43,106	28
For repairs Greene aqueduct, &c.	313	58
For a swing bridge at Hawley street, Binghamton....	2,385	37
For sinking foundation of lock No. 1, Chemung canal,	6,221	00
On account of pier at Watkins.......................	22,627	00
On account of pier at Geneva.......................	5,100	00
	$258,375	74
For ordinary repairs, including payments to repair contractors, incidental expenses, salaries, and expenses of general management	196,982	13
On account of construction of Oneida lake canal	88,378	67
On account of Chenango canal extension............	243,940	54
On account of awards by the Canal appraisers.......	47,145	61
From the General Fund	3,653	52
On account of engineering (exclusive of extension of Chenango and Oneida Lake canals)...............	5,927	28
Expenditures and salaries of superintendents	13,419	20
Total expenditures during the fiscal year........	$857 822	69

The general condition of the Middle Division has been considerably improved during the year, as it was, also, in the two years previous. Navigation has been more than ordinarily good, and with very few detentions. It is believed that while there has been no deterioration in any of the canals, all have been improved to a greater or less extent, resulting to the benefit of commercial interests, as well as to the public treasury, by increased revenues from free and comparatively uninterrupted navigation. And to the engineer department, which has existed almost without change during the official term of the undersigned, the public is largely indebted for these gratifying results; and the Commissioner desires to express his thanks for the uniform courtesy and efficient aid which he has received from that department.

Ten superintendents were assigned to duty on this Division by the Canal Board in the spring of 1868. During the first year, the Commissioners declined to approve their estimates for salaries; but subsequently, under a decision of the courts, and a directory resolution of the Canal Board, such estimates were allowed, and such allowance increased the expenses of the Division by about $20,000. All the duties which have been performed by them might have devolved upon the engineer corps, and nearly if not all of such expenditure been saved.

The repairs which have been made, and the present condition and necessities of the Division are set forth somewhat in detail in the following pages:

ERIE CANAL.

Repair Section No. 7.

Navigation upon this section, during the season, has been uniformly good, except a delay of seven days, in consequence of a breach in the towing-path at Pool's Brook. On the morning of the twenty-first day of September, about 2,200 cubic yards of earth were carried out, and the lands below flooded. Mr. Clark Snook, repair contractor, was persevering in the work of repairs, and the work proceeded with commendable speed. He states the cost of the repairs at about $4,000, which expense is fully covered by his contract. The occasion of the breach has been attributed to both natural causes and malicious mischief of individuals. There has never seemed to be good evidence for believing that the breach was consequent upon the neglect of the repair contractor; nor has satisfactory proof been given that a trench was cut across the towing-path as alleged.

During the season, the repair contractor has strengthened the banks at various places, and particularly near Pool's Brook, with brush and stone, which, not being included in his contract, was done at an expense of $6,414. A further expenditure of a like character can be made with profit.

Iron needle beams have been substituted for wooden ones in the iron bridge at Peterboro street, Canastota.

The composite culvert constructed at Canastota has been completed, and answers the purpose for which it was designed.

The reconstruction of the culvert at Cowasselon creek will be commenced immediately after the close of navigation, on the plan as recommended last year, by removing the present openings, ten in number, and constructing an aqueduct of two arches. It is expected that this change of capacity will be sufficient to pass the spring freshets *under* the canal, whereas as originally constructed the openings were so small, and on the "diving" plan, that, being filled with *debris* the berme bank was as frequently broken and carried *into* the canal as the freshets came.

Iron needle beams should be substituted for wooden ones in each of the iron bridges at Durhamville, Main street, Canastota, New Boston and Chittenango.

REPAIR SECTION No. 8.

There has been no interruption to navigation on this section during the fiscal year, except a delay caused by the breach on section No. 7, where a considerable crowd of boats collected. General repairs and several very important improvements have been made. The wooden needle beams have been removed, and iron ones substituted in the iron bridges at William, McBride, Salina and Clinton streets, Syracuse, and at Genesee street, Geddes. About twenty chains of vertical wall have been constructed on the berme side next below lock No. 49, greatly enlarging the water way and decidedly benefiting the forwarding interests. Four hundred feet were also constructed near Gere's bridge, Geddes. The towing-path has at low points been raised, the structures have been painted and the prism bottomed.

The most essential improvement, however, was made by the widening of the chambers of lock No. 49, at an expense of $14,873.40. By far the greatest part of the delay to navigation to eastward bound boats on the Syracuse level heretofore, was in consequence of the difficulty experienced in entering this lock. The largest class of boats have a width of beam scarce two inches less in many instances than the usual width of locks, and when laden to the greatest draught allowed, so completely fill the lock on entering it as to afford very little room for the escape of water as the boat is forced forward into the lock. The case is very different on entering a lock when the float is to be lowered instead of raised, for two reasons, to wit: There is more room for the escape of water from the lock between the bottom of the boat and the upper mitre sill and the breast wall, than at the lower mitre sill; and a current is also created by the leakage of the lower gates which materially aids the entrance of a boat. The boat entering a lock for an upward lift, besides having less passage way for water between its bottom and the mitre sill as stated, encounters a current created by the (thus far) unavoidable leakage of the head gates, thus meeting two obstacles to its progress. This theory has been practically demonstrated. The berme and towing-path walls were each set back two feet, and carried up on the same batter as before, and no difficulty whatever has been experienced during the season. The Syracuse level has been clear of jams and crowds, and the only detentions on the section have occurred on the "mile level" above this lock, at the eastern end of which lock 48 is situated, and a few chains beyond it is lock 47, at the western terminus of the long level. These locks have an upward lift of ten and one-half feet each to boats going east, and their chambers should be widened also. Delays at the Syracuse locks would thereby be entirely avoided, for the improvement would increase their capacity at the lowest estimate one-third, or sufficient to preserve an uninterrupted passage way at all seasons of navigation. An appropriation for the purpose is recommended.

A contract had been entered into for the removal of the wall bench on each side of the canal for a distance of about thirty chains east from lock No. 47, on the long level, and construction of wall commencing at canal bottom.

Provision has been made for lowering the western end of the long level eighteen inches deeper at lock No. 47, and running the grade line to O at Limestone creek feeder. This will involve the cutting down of the crown of the railroad tunnel one foot, which has been once before lowered several inches. This work is intended to assist in supplying the deficiency of water sometimes existing by rapid lockages. Reference is made to another page, where the construction of a reservoir is recommended for the same purpose.

Fifty-four chains of vertical wall on the Syracuse level is also under contract, and will be constructed during the winter. The three pieces of work last mentioned were let pursuant to an act of the Legislature passed last winter.

A new wrought iron bridge at Warren street, Syracuse, has been provided for, and the work let. When completed, the structure will be seventy-six feet in length, and sixty feet in width, with two roadways of twenty feet each, and two sidewalks of twelve feet each. The joists will be of iron, and the only wood used will be the planking.

The south abutment of the iron bridge at Lock street, Syracuse, is to be set back about twenty feet, and on a line with the berme wall. It has long been a serious detriment to navigation, the canal at that point not being wide enough for three boats abreast without "wedging." The change will require the construction of a new superstructure of increased length, and to insure the safety of the increasing travel over it of heavy loads, of greater strength. The present structure will be removed to Division street, on the Oswego canal.

The banks have been strengthened on the towing-path near Butternut creek, and on the berme west of Geddes, with brush and stone. Limestone aqueduct has been repaired, and the floor at the west end lowered four inches, to bring it to canal bottom. The towing-path and berme banks have been raised six inches for a distance of two hundred feet; also at Butternut creek aqueduct same distance and height, also from lock No. 49 to the Oswego canal, same height, also west of Geddes for a distance of two hundred feet, and below lock No. 50 for three hundred feet, each one foot.

The work mentioned in the above paragraph was all included in the repair contract, together with other miscellaneous repairs not mentioned. An effort has been made to put the section in good condition, and a gratifying result has been reached.

The breach at Pool's Brook, on section No. 7, caused a great crowd of boats upon both sections Nos. 8 and 9. As soon as navigation was resumed an extra force of men and teams was employed, and every facility afforded for dispersing the miles of accumulated boats.

The repairs commenced can be completed another spring, when this section will be in quite as good condition as at the completion of the enlargement, and its structures will be much safer and more enduring.

REPAIR SECTION No. 9.

Persistent efforts are rapidly relieving this section, and particularly Jordan level, of the many difficulties that have heretofore attended navigation. But much remains to be done to put it in a condition to insure good navigation permanently.

About 150 chains of wall-bench will be removed on each side during the winter, and substituted by wall commencing at canal bottom. Such a change should be continued till all of the wall-bench is removed from the section. The bottom in many places is quicksand, and in others a soft and uncertain material. Nothing but a well constructed wall on each side can prevent the sliding of the sides into the prism. When this work shall have been completed, a thorough "bottoming out" will put the section in good condition, so far as navigation is concerned. The structures will need considerable repairs, and the day is not far distant when the Richmond aqueduct, at Montezuma, will require to be almost entirely rewooded.

Iron needle beams have been put in place of wooden ones at McQuigg's, and at Brutus street, Weedsport, Dougherty's, and at Main street, Port Byron, and the road bridge at Crane brook. The supply of water will hereafter doubtless equal the demand. The reconstruction of the feeder at Port Byron on a permanent plan is recommended in another place. The present structure has become so much dilapidated as to be unsafe, and an expenditure of more than two thousand dollars has been made to maintain it during the season.

There are two locks (Nos. 51 and 52), on this section with an upward lift to eastern bound boats. They prove a serious hindrance to navigation for the same reasons stated in regard to those on repair section No. 8. The one at Port Byron (No. 52) is particularly difficult of entrance, and has a lift of eleven feet. There are water courses through its walls, if not under its foundation, that will necessitate the early reconstruction of the berme wall at least. The same recommendation is made as for the locks on section No. 8.

General repairs were made last spring to such an extent as the condition of the section would permit. The prism in most places is more successfully dredged than bottomed in the usual manner, owing to the character of the material. The structures have been more or less repaired, the banks raised in places, so that it may be said that the section is not deteriorating if not particularly improving.

Early last spring a water course was discovered under the new dam across the outlet of the Skaneateles lake reservoir. By great exertion, the structure was saved from total destruction, but was found, on examination, to be so much damaged as to require its reconstruction. If it had been carried away, the damage resulting to the property on the stream below would have been almost beyond calculation. The breach was caused by the water finding a course down into coarse material below the foundation of the dam, which was originally deposited there to fill the ravine. The dam was reconstructed during the season by the repair contractor, who was paid the actual cost thereof, according to the time and material account kept by an engiueer in charge of the work.

OSWEGO CANAL.

Repair Section No. 1.

There is no section on the middle division in better repair than this. Its prism has been well cleaned, and its structures well repaired. Its banks are well raised and protected, and as a consequence there has been no hindrance to navigation during the season.

Iron needle beams have been substituted for wooden ones in James', Salina, Salina (1st ward) and Park street bridges, during the summer. A new iron superstructure (taken from Lock street, Syracuse, on the Erie canal), will span the canal at Division street, before the opening of navigation another year.

A contract has been made for restoring the decayed docking in the north side cut at Salina.

Repair Section No. 2.

This section is largely composed of slack water or river navigation. It is subject to damage by high water, and as many of its levels cannot be drawn down, it is a matter of no little difficulty to keep it in proper repair. There has not been a detention of more than six hours duration during the season, and that in the case of a disjointed lock gate paddle. Various difficulties have been encountered in maintaining navigation, and much watchfulness has been required.

During the year the berme bank in the river below Phœnix (which dispenses with horseshoe dam) has been completed, and so has Braddock's rapids dam. Minetto dam is in course of reconstruction and will doubtless be completed another year, when high dam will stand as the sole representative of wooden or "composite" dams. The others will have all been reconstructed in a permanent manner of stone, and a contract is now on file for rebuilding high dam.

Before the opening of another season the scale in the weigh-lock at Oswego, should either be repaired or replaced. It is entirely unreliable now, and worse than worthless. From examinations which have been made by practical scale manufacturers, it is doubted if the present one is adapted to the necessities of an accurate scale.

The dam at Baldwinsville has been thoroughly repaired, and a quantity of decayed docking repaired. A new iron bridge is in course of construction to take the place of the present dilapidated wooden one. To make navigation what it should be on the Baldwinsville canal, a dredge should be employed to remove stone and material, which, in many places, quite close up the channel. This canal is not under repair contract.

The Oswego canal is generally in good condition, but considerable work will be required, particularly on section No. 2, to keep it so, another season.

CHENANGO CANAL.

REPAIR SECTION No. 1.

Where dilapidation abounds, and will abound till a vast expenditure of money is made, it cannot truthfully be said that the condition of affairs are satisfactory. This canal was completed in 1836, at a cost of $2,316,186. Its prism and locks are of the same size as the original Erie canal, though there is no docking on either slope. The prism is kept in as good condition as the plan of its construction will permit, which at best affords inferior navigation. The locks are particularly dilapidated, and nearly all of them require reconstruction, and unless liberal provision is made by the Legislature very soon for such purpose, the delays will amount to a closing of navigation on that canal. Of late years provision has been made for the reconstruction of from two to five each winter, but each year adds to the number of unsafe ones, and the work of decay is much more rapid than that of reconstruction. If this canal is to be maintained, and certainly there should be no disposition to abandon it, economy teaches that the earlier an appropriation is made for its benefit, the less expensive will be the cost of restoring it to a safe, navigable condition.

There have been several delays on this section during the season, in consequence of damages to and repairs of locks. Twenty-five locks were damaged during the season, and twenty-three new gates inserted.

Navigation was interrupted ten days by damages to Capron aqueduct, on the 8th of July, in consequence of very high water in the Saquoit creek. Every dam in the stream above was carried away, and much of the debris, including a house, was deposited at the entrance to the aqueduct. The walls were undermined, and one side of the trunk destroyed. Temporary repairs were made, and navigation resumed on the 18th of July. Permanent repairs of a very extensive character are required, and will be made during the winter, the expense of which, under the terms of the repair contract, will be divided between the State and the repair contractor.

Locks Nos. 18, 19 and 22 are under contract, and will be rebuilt during the winter.

Two iron bridges have been built at Eaton and Lebanon streets, respectively, in the village of Hamilton.

The reservoirs are in a very good state of repair, and with some excavation in the feeders will be in a good and serviceable condition. There has been an abundant supply of water during the entire season.

REPAIR SECTION No. 2.

The remarks made under the head of section one, in regard to the general condition of the canal and structures, apply to this section with equal force.

Except an expenditure of $900 for raising the feeder banks at Oxford, nothing has been done on this section outside of repair contract obligations. Though having low rates of compensation, the repair contractor has made commendable efforts to maintain navigation.

There have been some delays, but none of long continuance.

A contract has been made pursuant to special law for the construction of a wooden swing bridge at Canal street, Norwich.

The aqueduct at Norwich is failing, and must soon be rebuilt.

The raising of banks on the six mile level between locks Nos. 111 and 112, and construction of a waste-weir, would probably prevent a recurrence of considerable damages by overflow from spring freshets.

REPAIR SECTION No. 3.

This section, in a general point of view, is in very much the same condition as the rest of the canal. No work except such as was covered by the repair contract has been done upon it. Navigation has been ordinarily good, and with no more than the usual number of delays.

Pursuant to a special law, the present iron bridge at Greene is to be removed, and a swing substituted. This is the wish of the people immediately interested in the change; and who may find cause for regretting the removal of the present easy grade for a structure less accommodating.

The usual amount of work in the prism will be required next spring, and considerable more should be expended on the structures.

Navigation on the Chenango canal during the season has been ordinarily good, and attended with about the usual number of interruptions. Except the structures, the canal is perhaps in better condition than for many years previous.

CHEMUNG CANAL.

There have been but two delays to navigation on the Chemung canal during the season. One was caused on the 18th of June, by a damaged lock gate, which required two days to repair. The second occurred on the night of July 4th, by a breach in the towing-path at Gibson's, on the feeder. Navigation was resumed on the 8th, but a very heavy rain fell the next day, which washed bars into the prism above locks Nos. 15 and 26, also at Hubbard's run and Gibson's, and which were not removed and navigation restored till the 15th, making a delay of about ten days on that portion of the canal. With these exceptions, navigation has been excellent throughout the season.

An iron bridge, with stone abutments, has been constructed at Baldwin street, Elmira. No other extraordinary repair work has been done.

The pier at Watkins, for the protection of tows, has been completed, and the harbor thereby much benefited.

The chute in the dam at Gibson's, which was constructed for the passage of rafts over the dam, is old and dilapidated, and should receive immediate attention. It is suggested that the chute can be dispensed with by the construction of an apron, commencing at the abutment of the dam at the east end, and extending it one hundred and twenty feet, by one hundred and fifty feet in length. Under this plan, the removal of the piers forming the sides of the present chute would be required, also the docking above the guard lock. The dam would necessarily have to be extended, and a connection made with the guard lock by slope and vertical walls. This change would be of material benefit, and since the estimated cost is five thousand dollars less than to rebuild the chute, the change is respectfully recommended. The estimated cost is $60,000, and an appropriation of that amount should be made and the work commenced immediately, because, as now situated, the dam is in danger of being carried away.

A contract has been made, pursuant to a special law, for cleaning out and deepening the "State ditch" across lands of M. Sayres and others, from the feeder to the main canal. The estimated cost at contract prices is $4,000.

Proposals for dredging the lake level from Seneca lake to lock No. 1 were received, and the work awarded, but a contract has not been executed on the part of the party to whom the work was awarded.

The canal is generally in good condition, but of too small capacity to afford facilities for the accommodation of the carrying trade demanded of it. On another page the propriety of enlarging it is discussed and recommended.

CAYUGA AND SENECA CANAL.

Navigation has been good, except slight difficulties at Waterloo, during the season, and detentions at the point indicated can only be avoided by the construction of a new dam, when interested parties will be denied an opportunity of assuming an equal right with the State in the control of water.

The extension of the pier at Geneva for the better protection of the harbor, has been commenced, and the work has proceeded satisfactorily.

A contract has been made for the reconstruction of the chamber walls of locks Nos. 2, 3, 9 and 11. They were originally laid dry, but are now to be laid in cement. There are six other locks that should be reconstructed in the same manner.

The general condition of this canal has been improved during the last year, but there is still considerable work to be done to meet the requirements of repair contract obligations.

CROOKED LAKE CANAL.

There has been no interruption to navigation on this canal during the season.

A bar has formed in the harbor at Dresden, at the foot of lock No. 1, which should be removed before the opening of navigation, and some repairs should be made on the pier at Dresden, lower gates of lock No. 1, and several of the waste-weirs and bridges. This work is included in the repair contract. The bottom of the level between the guard lock at Penn Yan, and lock No. 27 should be lowered one and one-half feet to correspond with the mitre sills of these locks. The foundation of the guard lock, and breast wall of lock No. 27 were lowered such a distance when rebuilt, and in 1863 and 1864 a portion of this level was lowered, but not completed, and of which uncompleted portion there remains about twenty chains, or 2,000 cubic yards.

Locks Nos. 12, 13, 24 and 27 were reconstructed last winter. Nos. 8, 9, 10 and 11 are very poor, and should be reconstructed as soon as means for the purpose can be provided.

With the work above indicated performed, the Crooked Lake canal will be in good condition.

ONEIDA LAKE CANAL.

The construction of this canal upon a new route has not been completed. Section one is about three-quarters done; section two about one-half; section three not quite one-half; section four about three-quarters, and section five scarcely one-quarter. The work might have been completed, but it was not deemed expedient to complete it till provision for feeding it was made. Its only source of supply will be the long level of the Erie canal, which cannot afford to share its waters, as its supply is inadequate to the present demand made upon it. A reservoir can be constructed on the Cowasselon creek, as stated on another page, which would afford the increased supply which will be required when this canal is brought into use.

CHENANGO CANAL EXTENSION.

All the work from Binghamton to and including section No. 30, has been put under contract, except the dam and guard lock at the former place.

The cost is estimated at	$1,568,564 33
From section No. 30 to the State line, no location has been made, but comparative surveys are being made. The approximate estimated cost is	250,854 00
Making total cost	$1,819,418 33

The estimated amount of work remaining to be done is	$850,000 00
Percentage retained on work done and to be paid on settlement of contracts	43,392 00
Add for engineering and contingencies	66,000 00
Total	$959,392 00
Deduct balance of appropriation unexpended Sept. 30th	155,000 00
Amount required to complete	$804,392 00

If this work is to be completed, it will be necessary to make an appropriation of the amount above given, at least.

THE STATE DREDGE.

During the three years last past the State dredge has been no expense to the State, but by its earnings has paid all of its expenses for repairs of machinery, for new floats, and crane, and general repairs of the gearing and hull. It stands credited with $1,584.38 in the final account for the construction of the berme bank in the Oswego river, and $145.77 cash on hand, being surplus earnings by rent to contractors.

SUPPLY OF WATER.

The necessity so long experienced of an increased supply of water on section No. 9 of the Erie canal, will, another season, be no longer felt. The Otisco lake reservoir, with a drainage basin of 22,000 acres, and flowing 2,200 acres, with an average depth of ten feet, and capable of supplying 6,975 cubic feet of water for a period of 120 days, will be brought into use. The reservoir is situated about eleven miles directly south of Marcellus, and its course to the canal is via Nine Mile creek and Camillus feeder. It will fully supply the deficiency heretofore existing on the Jordan level, and will prove to be second in importance to none on the Division.

The construction of the new dam at the outlet of Skaneateles lake reservoir, gives a greater available head from that source. Those waters enter the canal at Jordan.

The improvement of Owasco lake will not produce a greatly increased supply of water, but as the flow will be of much longer duration, the object attained will fully compensate for the expense. Those waters reach the canal through the feeder at Port Byron.

Experience has demonstrated the availability and actual necessity of the feeder at Port Byron. It was constructed upon a temporary plan, and is already in need of extensive repairs. It has been necessary during the season to make expenditures upon it from time to time to maintain it. It is recommended that an appropriation be made to rebuild it on a permanent plan, as the duration of the present structure is only a question of time.

Before the Oneida Lake canal is brought into use it is necessary to construct a new reservoir, to compensate for the water required by it from the Erie canal, which, it is well known, will be the only source of supply. The emergency, however, can easily be provided for, by the construction of a dam across the Cowasselon creek, a few rods south of the old turnpike road, a short distance east of Wampsville. There is a drainage basin of 17,000 acres, and an area of 136 acres, and an average depth of twenty-one feet could be had, which would afford a supply for sixty days, including the natural flow, of 2,361 cubic feet per minute. The estimated cost, exclusive of land damages, is $131,883.

The necessity for more water on the extreme western end of the long level has been too often represented to require any special explanation now. The great draught caused by the active working of lock No. 47, often reduces the depth of water to a point where loaded boats eastern bound experience serious difficulty in leaving the lock, in consequence of touching the mitre sill. This difficulty can be wholly remedied by the construction of a reservoir on the Butternut creek feeder. Surveys have been made, and a location found with a drainage basin of 40,000 acres and area of 210 acres. An average head of nineteen feet can be obtained, and a flow of 1,880 cubic feet per minute, for a period of sixty days, exclusive of the natural flow. The estimated cost, exclusive of land damages, is $162,430.

It is believed that with the two reservoirs last above mentioned constructed, the supply of water for the long level would be ample for years to come. The two would give a drainage basin of 57,000 acres, with an area of 346 acres and a flow per minute for sixty days of 4,241 cubic feet, with a total estimated cost of $294,313. An appropriation for the construction of each of these reservoirs is respectfully recommended.

DRAINING CAYUGA MARSHES.

The Commissioner has been solicited by various interested parties to recommend to the Legislature the propriety of making another appropriation for, and a consequent resumption of, the work of draining the Cayuga marshes, by dredging or deepening and widening Seneca river. It is claimed that previous to the enlargement of the Erie canal across the marshes at and near Montezuma, many thousand acres of lands were reclaimable, which have since been submerged by the construction of the canal banks, to an extent rendering them nearly or quite valueless, in consequence of the "setting back" of the waters of Seneca river and its tributaries. The Commissioner has therefore felt called upon to give the subject a full examination, and he presents the following as a result:

The Legislature of 1853 passed "An act (chap. 178,) to provide for the effectual draining of the Cayuga marshes and swamp lands," and appropriated $100,000, based on the estimate of Hon. George Geddes, of $144,687. The act further provided that "on the completion of the work," three appraisers should be appointed who should assess the benefits upon the lands improved, and which lands should reimburse the State treasury. In pursuance of this act, the bar at Jack's Reef was removed in 1857, at a cost of $169,000, thus exceeding the estimate for the whole work $24,313, in the removal of a single bar. Subsequently $28,727 were expended in a partial removal of the bars lying between Jack's Reefs and the New York Central (direct line) railroad bridge. Between the last named point and the marsh lands lying above the Erie canal at Montezuma, the river has been widened and deepened at a further cost of $30,000, to relieve the lands lying south of the canal, and which it is claimed are damaged by overflow resulting from the new embankment, and which several sums make a total expenditure under the act of 1853, of $227,727.

But while the work has been in progress, the Legislature has from time to time authorized the canal appraisers to hear and determine the claims for damages "in consequence of the construction of the aqueduct across Seneca river, near Montezuma, by which the channel of that stream and also of the Canandaigua outlet or Clyde river, are so constructed as to obstruct the natural flow of the water, and the same being set back upon claimants' lands situated above the aqueduct and adjacent to the streams." Claims have been heard by the appraisers and awards made to the amount of $72,316.50. It is believed that all the claims from this cause have been filed in the appraiser's office, and the amount of such claims unheard is $65,869. It is safe to deduct a large percentage from these claims, and by applying the rule of damage in the claims which have been settled to those still undecided, it is safe to say that the latter will be reduced to $40,000, which added to previous payments will make a total of $110,316.50; which amount, it is believed, may be considered as in full liquidation of all claims for damages in consequence of the enlargement of the canal across the marshes, and $117,410.50 less than the amount already expended "for the effectual draining of the Cayuga marshes and swamp lands."

But a second question presents itself. What has been done in removing obstructions and deepening and widening Seneca river, according to the official reports, as well as practically demonstrated, has had the effect to considerably lower the surface of the river, and also to cause a more rapid subsidence of freshets above Jack's Reefs. And this seems to be corroborated by the fact that parties owning lands on the river below complain that they are correspondingly deluged by the spring freshets being more suddenly let down through the cut at Jack's Reefs and in the bars above. There are indications that claims for damages resulting are to be made for a considerable distance below Jack's Reefs, and extending to, if not down, the Oswego river. Already the Canal Appraisers have heard several claims of this nature. Two years ago the Legislature was asked to make an appropriation for the construction of an embankment at the head of Onondaga lake, to protect the coarse salt fields from destruction in consequence of floating ice in the winter, and especially spring seasons, it being held that the water was raised to an unprecedented height each spring, on account of the "improvement" of the cut at Jack's Reefs.

No estimate of the cost upon a plan that professes an entire completion of the drainage of the marshes is contained in any of the published reports upon the subject, except the original one by Mr. Geddes, already mentioned, amounting to $144,687. But the work has, however, cost up to this date, $227,727, and the official reports agree in the opinion that a very large amount of work remains to be done to complete any plan that will prove effectual.

The condition of the enterprise may be briefly stated, then, as follows, to wit:

1st. Two hundred twenty-seven thousand, seven hundred and twenty-seven dollars have been expended; and as the work has not been "completed," no part thereof has been assessed and recovered from the property intended to be benefited.

2d. Since the cost of the work was originally estimated, there has been no estimate made of the cost to complete on any certain and effectual plan, except at a further expense of nearly $300,000.

3d. It appears from official figures that if the State had in the first instance paid the claims for damages, the total amount would have been considerably less ($117,410.50) than the amount expended pursuant to the act of 1853 up to this date.

4th. It would seem that if the work should be completed on the most approved plan, the chief result would be in changing the location from whence claims for damages would originate—that is, from above to below Jack's Reefs.

It should be borne in mind that the plan first adopted, "*to drain the Cayuga marshes*," was afterward changed to one "*to compensate for the obstructions by the State at Montezuma.*" (See Engineer's report to Canal Commissioner, September 30, 1862). As hereinbefore shown, the damages arising on account of "obstructions by the State," are in course of settlement in quite another manner, so that in that direction there appears to be no reason for "compensating" for such damages by any work upon the river. But if it should be deemed advisable to return to the work of "draining the marshes," it might be well to stop and inquire if the total value of the lands to be reclaimed would equal the cost of reclaiming them. Or, if such lands have been purchased at a nominal sum, should the State be made simply an *agent* to do the work, advance the money required, and be reimbursed when the work is "completed," which declaration, in the nature of things, will doubtless be indefinitely postponed.

In view of the uncertain cost to "complete" this work, also of the large amount paid and to be paid for damages alleged to have been caused by the enlargement of the Erie canal at Montezuma, and which, it is believed, covers nearly if not all the claims that can arise from that cause, and also of the significant threatenings of claims from parties below Jack's Reefs, and on the shores of Onondaga lake, which in some localities is thickly covered with salt manufactories, and acknowledging that when such claims shall have been enlarged by enlarging the cuts of the bars in Seneca river, the claims resulting may exceed those already filed and paid at Montezuma. The undersigned feels it to be his duty to admonish the Legislature to well and truly examine any future claims, or efforts to secure further appropriations "to provide for the effectual draining of the Cayuga marshes and swamp lands."

Reference is made, in conclusion, to a report and estimate made by Division Engineer Goodsell, January 18, 1865, in answer to a resolution of the Senate, in which it will be seen that the estimated cost to effectually complete the work is given in detail, attached to the report, amounting to $292,380.

ENLARGEMENT OF THE CHEMUNG CANAL.

The steady increase in the anthracite coal trade from the North Branch and Pennsylvania canals, and the equally rapid increase in the bituminous coal trade via Corning, should attract the attention and consideration of those whose duty it is to guard the interests of the canals and to furnish the people with facilities for cheapening the necessaries of life. The transportation of coal from the mines to market rightfully belongs to the canals, because (1) the expense is less, and (2) because to increase the quantity shipped by canal is to correspondingly add to the revenues. The enlargement of the Chemung canal, including the feeder, is now necessary to meet the demands made by the coal traffic alone, and to enable the transportation of an increased tonnage which, constantly increasing, is seeking that channel of communication with the markets. But, owing to the incapacity of the canal, a large amount of its legitimate tonnage is forced upon the railroads; whereas, if large or first class boats could pass from Seneca lake to Elmira and Corning, the whole, or nearly so, of this rapidly increasing trade could be made not only to largely swell the revenues of the Chemung and other canals of the State, but, by lessening the cost of transportation, reduce the cost to consumers. And as this is the natural outlet in this State from the coal fields of Pennsylvania, the increase of tonnage via Elmira and Corning must continue so long as the demand increases by reason of multiplying population and constantly increasing consumption.

And this is the *cheapest* route to either Buffalo or Albany; for while the distance from the southern terminus of the Chenango canal extension (when completed) to Buffalo, is 379 miles, the distance via the Chemung canal is but 197 miles. So via the Chenango extension and Utica to Albany, the distance is 248 miles, while the distance via the Chemung canal is 244 miles. These distances do not include the Seneca lake, nor should they, for the expense of towing is merely nominal and without tolls.

The difference between the cost of transportation of every ton of coal carried on boats of the largest class, or carried by railroad to Buffalo, may be safely stated at *seventy cents*, while at times the variation will be greater, but seldom less. And on every ton shipped to Albany, the difference is *fully two dollars*, it being a well understood fact that, on railroads, eastern bound freight pays the profit; hence the difference in expense of eastern and western shipments.

The expenses of a first class boat, carrying two hundred and twenty-five tons, are scarcely greater than those of the smallest class. While first class boats could readily be had at three-quarters of a cent rate per ton per mile, the smallest class, such as now navigate the Chemung canal, exclusively, owing to inferior capacity and consequent inability to carry the same tonnage, are necessitated to establish a rate per ton per mile one and one-quarter cents higher, to put them on a compensating equality with boats of the largest class.

There can be no doubt, that if sufficient water facilities were afforded, nearly if not entirely all of the coal seeking market via Elmira and Corning, would naturally take this channel; and with increased facilities for transportation, it would attract to it a tonnage larger than the natural increase. But a short time would elapse before the State would not only be reimbersed for its enterprise, but would save besides what it is sure to loose by the forced construction of greater railroad facilities to accommodate this important trade. The history of the past gives some idea what the future is to be; and it seems to be the imperative duty of the State to provide for the expansion of the trade before private enterprise and actual necessity diverts it beyond recovery. It is believed that however the proposition may now be received, that such an enterprise is only a question of time, and statistics will prove to the inquiring mind that the work cannot be too soon commenced.

The Legislature had this project in view when, in 1863, it ordered that whenever it should be necessary to rebuild any of the locks of the Chemung, they should be rebuilt of the same size of those of the Erie canal. But this process will prove too slow; and before an enlargement can be made by such a course, trade will be so diverted as to render its recovery impossible.

The enlargement of the Chemung canal and feeder to a capacity equal with the Erie canal is respectfully recommended, and in the confident belief that to delay action is to suffer irreparable loss; while the people will continue to be overtaxed for an important article, the cost of which might be lessened by the State by increasing its revenues in the manner proposed.

GENERAL MANAGEMENT.

A judicious management of the important interests committed to the charge of canal officers, and those in authority, requires much watchful care, firmness of purpose, and a strict adherence to the laws, rules and regulations adopted for their guide and government. Every departure from such a course, must of necessity exert more or less of a demoralizing effect upon the general management of the canals. And particularly is this true of a practice which has lately come in vogue. If a contract between the State and an individual is binding on the State, and "the party of the second part" is required to fulfill its contract obligations to the letter, why should not the same requirements be made upon the party of the first part? But quite lately a new practice seems to convey the idea that the obligations of the State are only binding, while the performance of the obligations on the part of the contractor are optional with him. This is a fair inference to be derived from reading the proceedings of the Canal Board for the two years last passed, where sundry contracts have been abandoned simply on the petition of the contractor, he not even claiming that the State has in any way failed to fulfill on its part. Too low prices, or meeting with unforseen obstacles, influences the contractor to present his petition for abandonment, and it has been readily granted; but the instance remains to be entered upon the proceedings of the Board where a contractor has petitioned for the cancellation of a contract when the State was the loser. The authority for this practice may well be questioned. Chapter 348, of the Laws of 1849, has been used for the purpose, but a subsequent law (chapter 495, Laws of 1859), says: "The Canal Board shall not have power to cancel any contract entered into for the enlargement and completion of the canals of this State, unless, upon application of the contractor or contractors *in cases where the State has failed to make payment according to the contract.*" And so, too, of repair contracts. Several repair contractors, holding unprofitable contracts, have petitioned for the abandonment of their contracts, and the prayers of the petitioners have been granted, "pursuant to section 4, chapter 252, Laws of 1864." A very grave doubt exists, also, in this case, of the authority of the Contracting Board to grant such petitions. The section of law alluded to was undoubtedly intended to provide for the relief of repair contractors in the year 1864, and was never intended to be operative thereafter. The undersigned has invariably recorded his vote in the negative, when applications for abandonment, in the form above alluded to, were made, and in the firm belief that no authority existed for granting the prayers of such petitioners.

Such practices are demoralizing to the system of canal management, and enfeeble the Commissioners in exercising the control which must be had to insure a strict compliance of contractors with their obligations. These petitions are substantially *appeals* from the Commissioners, and contractors have learned to not only look to the Legislature for relief, but are now prefering the leniency of the Canal and Contracting Boards instead. Other practices of a somewhat kindred nature should be corrected, else our entire canal system is in danger of being seriously impaired, if not entirely ruined.

Another serious difficulty surrounding the Commissioners in the discharge of their duties is that they are in too great a degree subject to the action of the Canal Board. They are the officers held immediately responsible by the people for good navigation and the preservation of the canals, yet the Legislature has been gradually lessening their powers, and increasing those of the Canal Board, till five men whose chief duties are of another character, are enabled to dictate to the remaining four (who should be the advisers and not the advised) what the welfare of the canals demand. Each Commissioner should be authorized to appoint his own assistants, and all authority, if any exists, for the appointment of superintendents by the Canal Board abolished. Provision should also be made for allowing the Commissioners to severally appoint a *canal police*, whose duty should be upon the towing-path, assigned to regular beats of such length as circumstances may require, to watch the banks and render any required assistance to boats. Such police force should be invested with powers discretionary with the Commissioners; and each Commissioner should also be invested with power to exercise his own judgment generally in the discharge of his duties, instead of being governed in too great a degree by the *impressions* of colleagues in the Canal Board, who have not sufficient acquaintance with the necessities of the public works to form an opinion upon which to
base sound *judgment*. The attention of the Legislature is respectfu impe-
requested to an examination of the dilemma of the Commissio ment, it

A confusion of legislative enactments and legal decision interests are
the injurious effect of in too great a degree distributing pioneers nearly
and the distribution has been so great and so genera ervants."
of individual responsibility might well arise. itted.
If a person is not willing to assume the
the position he occupies in the public
upon it; but once in it, he should
performance of his duties, whet

S. T. HAYT,
Canal Commissioner.

not. When individual responsibility shall to a greater degree occupy the place of collective responsibility, our public institutions will be correspondingly strengthened in the estimation of the people. A codification of the laws, rules and regulations of canal management is respectfully recommended as calculated to effect such a reform, for it is not surprising that under the present conflicting laws, etc., errors sometimes occur, and which confused condition of fundamental law naturally gives rise to much that is injurious and is constantly shifting responsibility and becomes the basis for new and reversing decisions.

The people demand "the best canals and best management;" and, as the people are the owners, they have a right to dictate how they shall be managed. Economy, durability and serviceability are the three objects to be jointly attained. The people are opposed to only such systems as experience shows to be wrong, and as strongly favor those practically demonstrated as correct. Yet sometimes it occurs that a wrong administration of what correctly managed would prove a good system brings it into disrepute. For this the *system* should not be held at fault, but rather the manner in which it is *administered*. By the same rule, a noble cause should not be abandoned because of inefficient, chosen leaders or those having no desire to discharge the duties imposed. So of the repair contract system. Experience has demonstrated that if canal officials will exact of repair contractors a strict compliance with the terms of their contracts, the system would prove to be infinitely superior to the old and exploded superintendent system, which was always characterized by inefficiency and enormous expenditures. It remains for the Legislature to say whether canal officials shall be required to perform their duty in this respect, or whether a return shall be made to a system far more obnoxious to all who desire the prosperity and permanance of our canals.

CONCLUSION.

The canals of the State have risen from the doom which once threatened them, and have most effectually silenced the cry of those who were clamorous for their sale. The wisdom and foresight of their projectors have been evidenced by the prosperity which has attended the result of their indomitable perseverance.

While Washington originated the idea of artificial water communications in this country, it was left for Clinton and his compeers to originate and inaugurate a system in this State. Then, as since, the most violent opposition was offered to the project, but those pioneers "had the hardihood to brave the sneers and sarcasm of men, who, with too much pride to study and too much wit to think, undervalued what they could not understand, and condemned what they could not comprehend." But a monument of national admiration has been erected to their memory by the completion of the enterprise they inaugurated; and how correct has time proven a sentiment offered at the celebration of the opening of the Erie canal nearly half a century ago: "The State of New York; she has added another wonder to the world; her posterity, in the full fruition of its blessings, will guard with grateful recollections the rich bequest of their fathers."

The great and growing west is connected with the seaboard, and the State threaded with lines of intercommunications. The products of the earth, whether on its surface or in its depths, find ready and cheap channels to the markets of the world.

Long since, they ceased to tax the people for their support, and commenced to refund by their earnings, the loans they had made. If temporary loans have since been made by taxation, every dollar has been repaid with liberal interest. Without stopping to raise the question whether or not they should be made a source of revenue to the public treasury, let us pass to their importance in providing a cheap rate of transportation, and in preventing a monopoly that otherwise would exist through railroad combinations. There are those who argue that for this reason alone, the entire abolishment of tolls, and their maintenance by direct tax would be preferable to their abandonment. But there is a future for them, however, as there has been a past. If the wise policy which has generally controlled their management heretofore, shall be continued and improved hereafter, there can be but little doubt of their continued prosperity. If integrity shall be associated with official competency, and economy be joined with the spirit of improvement, it shall finally be said of those to whom their important interests are to be committed in the future, as was said of the pioneers nearly fifty years ago: "Well done, good and faithful servants."

Respectfully submitted.

S. T. HAYT,
Canal Commissioner.

SYRACUSE, *September* 30, 1869.

STATEMENTS

ACCOMPANYING THE ANNUAL REPORT OF THE CANAL COMMISSIONER IN CHARGE OF THE MIDDLE DIVISION OF THE NEW YORK STATE CANALS, FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1869.

Statement showing the canals, feeders and reservoirs in charge of the Commissioner.

CANALS.

	Miles.
1. The Erie canal from Higginsville, Oneida county, to the county line between Seneca and Wayne counties, including Limestone, Butternut, Nine Mile creek and Port Byron feeders	71.93
2. The Oneida Lake canal, five and one-quarter miles, the Oneida feeder, falling into the Erie canal at Durhamville, and navigable one mile	6.25
3. The Oswego canal	38.
4. Oneida river improvement	20.
5. Seneca river towing-path	5.75
6. Seneca river improvement, at Baldwinsville, including three-quarters of a mile of slack-water navigation, without any towing-path, from Baldwinsville to Jack's Reefs	12.50
7. Cayuga and Seneca canal	22.77
8. Cayuga inlet	2.
9. Crooked Lake canal	8.
10. Chemung canal	23.
11. Chemung canal feeder	16.
12. Chenango canal	97.
13. Chenango canal extension	39.65
Total	362.85

RESERVOIRS.

	Areas, acres.	Depth, feet.	Length of feeder, miles.
Erieville	340	21½	20
Hatch's lake	134	10	8
Eaton brook	254	50	8
Bradley brook	134	25	3
Leland pond	173	8	½
Woodman's lake	148	11	¼
Madison brook	235	45	2
Skaneateles lake	8,320	6	9
Cazenovia lake	1,778	4½	10
De Ruyter	626	18½ avg.	25
	12,142		85¾

STATEMENT showing names of repair contractors, annual compensation, etc.

CANALS.	No. of section.	Names of Contractors.	Annual compensation.	Date of contracts.	Expiration of contracts.
Erie................	7	Clark Snook, assignee	$5,000	May 1, 1866	Dec. 31, 1870
Erie................	8	Aaron G. Fish...................	18,000	Mar. 1, 1869	Dec. 31, 1873
Erie................	9	Sylvester D. Keller, assignee	6,900	May 1, 1866	Dec. 31, 1870
Chemung	All ..	Jarvis Lord, assignee	36,000	Jan. 1, 1867	Dec. 31, 1871
Chenango...........	1	James J. Belden.................	17,000	May 1, 1866	Dec. 31, 1870
Chenango...........	2	John Hull	9,970	Dec. 1, 1868	Dec. 31, 1872
Chenango...........	3	Franklin N. Lord, assignee.........	18,000	June 1, 1866	Dec. 31, 1870
Oswego	1	Mead Belden, assignee............	18,500	Jan. 1, 1867	Dec. 31, 1871
Oswego	2	A. Cadwell Belden...............	28,400	Mar. 1, 1869	Dec. 31, 1873
Crooked Lake	All ..	Oliver C. Knapp.................	7,750	Mar. 1, 1869	Dec. 31, 1873
Cayuga and Seneca...	All ..	Geo. M. Case, assignee............	20,000	Jan. 1, 1867	Dec. 31, 1871
Total annual compensation..............................			$185,520		

STATEMENT giving description of sections and expenditures thereon during the fiscal year.

ERIE CANAL.

The Middle Division of the Erie canal extends from the eastern bank of the Oneida Lake canal to the east line of Wayne county, seventy-two miles, and comprises three repair sections, as follows:

Repair Section No. 7.

Thomas Mulhall, *Superintendent.* Clark Snook, *Repair Contractor.*

This section embraces twenty-seven miles of the Erie canal, extending from the east bank of Oneida Lake canal to the Limestone creek feeder; the Oneida creek feeder, two miles in length, navigable from Durhamville to Oneida, a distance of one mile; and the Erieville and Cazenovia lake reservoirs and Chittenango feeder. Total, twenty-nine miles. The structures are: two aqueducts; twenty-three culverts; one wooden lift lock (Oneida feeder); five iron bridges; three wooden farm bridges; fifteen wooden road bridges; one guard gate (Oneida feeder); three waste-weirs; three feeder dams; two guard gates.

The expenditures upon this section during the fiscal year were as follows:

Drafts on Auditor.

For compensation of repair contractor	$4,291 68	
For part salary of Commissioner	400 00	
For balance on account of bridge at Higginsville	2,213 68	
For an iron bridge at outlet of reservoirs at Cazenovia	1,423 85	
For strengthening rear of towing-path bank at west end Oneida creek aqueduct	898 50	
On account of culvert at Canastota	1,258 00	
		$10,485 71
Miscellaneous, salaries, &c		3,073 78
Disbursements by Division Engineer		761 73
Salary of Superintendent		1,000 00
Total expenditures on section No. 7		$15,321 22

Repair Section No 8.

P. P. Midler, *Superintendent.* Aaron G. Fish, *Repair Contractor.*

This section extends from Limestone creek feeder to lock fifty, above Geddes, including Limestone and Butternut feeders, each navigable one mile; total, thirteen miles. The structures are: three double stone lift locks; two aqueducts; four culverts; one weigh lock; one wooden farm bridge; three wooden feeder bridges; one wooden towing-path bridge; nine wooden road bridges; two iron tow-path bridges; nine iron road bridges; one iron foot bridge; one feeder dam; one waste-weir; three lock houses; one State shop.

The expenditures upon this section during the fiscal year were as follows:

Drafts on Auditor.

For compensation of repair contractor.....	$8,926 96	
For part salary of Commissioner.........	400 00	
For use of engine and procuring machinery for towing boats through lock No. 49, per resolution of Canal Board passed January 6, 1869............................	904 08	
For an iron bridge at Geddes street, on change of plan, difference in cost.......	2,071 10	
For vertical wall on Syracuse level	5,999 97	
For vertical wall at Geddes..............	1,805 85	
For widening chamber of lock No. 49.....	14,873 40	
For iron needle beams in Salina street bridge, Syracuse.....................	2,130 11	
For an iron bridge at Coykendall's, change of plan, difference in cost............	1,902 00	
		$39,013 47
Miscellaneous, salaries, &c...............		5,065 51
Disbursements by Division Engineer......		761 73
Salary of Superintendent.................		1,000 00
Total expenditures on section No. 8...		$45,840 71

Repair Section No. 9.

William Jones, *Superintendent.* S. D. Keller, *Repair Contractor.*

This section extends from the foot of lock fifty to the east line of Wayne county, embracing the Skaneateles lake and feeder, and the Camillus feeder, navigable one mile; total, thirty-five miles.

The structures are: three double stone lift locks; six aqueducts; two waste-weirs; six culverts; one wooden change bridge; eleven wooden road bridges; six wooden farm bridges; eleven iron road bridges; one iron foot bridge; two guard gates; four feeder dams; three receivers.

The expenditures upon this section, during the fiscal year, were as follows:

Drafts on Auditor.

For compensation of repair contractor ...	$6,900 00	
For part salary of Commissioner	400 00	
For protecting channel Skaneateles lake outlet	5,193 30	
On account of Otisco lake reservoir	13,260 00	
On account of improving Owasco lake outlet	5,253 00	
For a wrought iron girder bridge across Skaneateles lake outlet	4,500 00	
		$35,506 30
Miscellaneous, salaries, &c		4,146 14
Disbursements by Division Engineer................		761 73
Disbursements by Division Engineer on account of Otisco lake reservoir............................		1,665 63
Superintendent's salary and expenditures............		4,308 50
Total expenditures on section No. 9............		$46,388 30

OSWEGO CANAL.

This canal extends from Syracuse to Oswego, thirty-eight miles; and includes the Seneca river towing-path and Baldwinsville canal and the Oneida river improvement. It is divided into two repair sections, as follows:

Repair Section No. 1.

James Caldwell, *Superintendent.* Mead Belden, *Repair Contractor.*

This section extends from Syracuse to Three River Point, and includes the Seneca river towing-path and Baldwinsville canal. Total, twenty-one and a half miles.

The structures are: four lift stone locks; one composite lift lock; one wooden lift lock; one wooden guard lock; four composite culverts; five iron road bridges; one iron change bridge; eleven wooden road bridges; four wooden change bridges; two floating tow-path bridges; one wooden river dam; three waste-weirs; four lock houses; one State shop.

The expenditures upon this section during the fiscal year, were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor...	$18,500 00	
For part salary of Commissioner........	400 00	
For iron needle beams in bridge at Salina street, Syracuse....................	3,044 90	
For ditto, Willow street	1,744 28	
For resolution, Canal Board, April 14, 1868,	3,364 39	
For 400 feet docking at Liverpool.......	2,026 00	
		$29,079 57
Miscellaneous, salaries, &c.........................		1,830 59
Disbursements by Division Engineer................		686 61
Superintendent's expenditures, and part salary.......		810 70
Total expenditures on section No. 1............		$32,407 47

REPAIR SECTION No. 2.

JAMES CALDWELL, *Superintendent.* A. C. BELDEN, *Repair Contractor.*

This section extends from Three River Point to Oswego, including the Oneida river improvement, 43 miles. The structures are: thirteen stone lift locks; five stone guard locks; two steamboat lift stone locks (120x30); five wooden waste-weirs; seven wooden road bridges; two wooden road and change bridges; six wooden change bridges; one wooden river tow-path and change bridge; two iron road bridges; three stone river dams; six wooden river dams; one aqueduct; one bulkhead; one drawbridge; four composite culverts; twenty lock houses; one State shop.

The expenditures upon this section during the fiscal year were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor.....	$21,987 46
On account of rebuilding Minetto dam....	21,828 00
For securing apron of Phœnix dam.......	2,512 62
For raising banks at guard lock No. 2.....	4,000 00
On account of Braddock's rapids dam.....	25,113 12
On account of berme bank...............	16,133 00
For an iron bridge at Oswego, pursuant to act, chap. 715, Laws of 1868, and resolution of Canal Board, January 6, 1869.......	13,843 00
For iron needle beams in First street bridge, Fulton	1,417 11
For resolution Canal Board, April 27, 1868, and June 16, 1869....................	4,429 00
For dredging at Oswego.................	157 00
For piles at Oak Orchard, resolution Canal Board, June 11, 1869................	250 00

For raising banks	$1,020 00	
For part salary of Commissioner	400 00	
		$113,090 31
Miscellaneous, salaries, &c		3,112 13
Disbursements by Division Engineer		686 61
One-half salary of Superintendent		500 00
Total expenditures on section No. 2		$117,389 05

CHENANGO CANAL.

Gideon Wilber, *Superintendent.* J. J. Belden, *Repair Contractor.*

This canal extends from the Erie canal at Utica to the Susquehanna river at Binghamton, 97 miles. It comprises three repair sections, as follows:

Repair Section No. 1.

This section extends from the junction of the Chenango and Erie canals, in the city of Utica, to the foot of lock eighty-one, one mile south of the village of Hamilton, 31 miles. The following reservoirs are located upon it: Madison brook, Woodman's pond, Leland's pond, Bradley's brook, Hatch's lake, Kingsley's brook, and Eaton's brook, all of which are in the southern part of Madison county. Connected with the section are 13¾ miles of feeders. Total miles, canal and feeders, 44¾ miles. The structures are: seventy-seven composite lift locks; four stone lift locks; four wooden trunk aqueducts; one stone arch culvert; one guard lock; twelve arch culverts; seven box culverts; nine waste-weirs; three iron bridges; forty-four wood bridges; thirty bridges on feeders.

The expenditures upon this section during the fiscal year were as follows:

Drafts on Auditor.

For compensation of repair contractor	$17,000 00	
For iron bridge at Clinton	949 04	
For iron bridge at Eaton street, Hamilton,	2,941 40	
For iron bridge at Lebanon st., Hamilton.	2,532 06	
On account of rebuilding lock No. 18	612 00	
On account of rebuilding lock No. 19	612 00	
On account of rebuilding lock No. 22	646 00	
		$25,292 50
Miscellaneous, salaries, &c		936 35
Disbursements by Division Engineer		207 71
Salary of Superintendent		1,000 00
Total expenditures on section No. 1		$27,436 56

REPAIR SECTION No. 2.

C. W. OLENDORF, *Superintendent.* JOHN HULL, *Repair Contractor.*

This section extends from the foot of lock eighty-one to and including the first farm bridge above lock one hundred; distance thirty-four miles. The structures are: eighteen composite lift locks; eighteen wooden trunk aqueducts; six waste-weirs; nine bridges on feeders; three iron bridges; sixty wooden bridges, thirteen arch culverts.

There are six feeders with an aggregate length of four miles, with dams to the length of one thousand feet.

The expenditures upon this section during the fiscal year were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor	$9,970 00
Miscellaneous, salaries, &c.	475 09
Disbursements by Division Engineer	207 71
Salary of Superintendent	1,000 00
Total expenditures on section No. 2	$11,652 80

REPAIR SECTION No. 3.

J. B. WILMOT, *Superintendent.* F. N. LORD, *Repair Contractor.*

This section extends from the first bridge north of lock one hundred to the junction of the canal with the Chenango and Susquehanna rivers, in the village of Binghamton, distance thirty-two miles. The Stratton and Chenango Forks feeders are located on this section, the Stratton being about fifty rods in length, with a dam three hundred and fifty feet in length, and having two bridges, one farm, the other towing-path. The Chenango Forks feeder consists of a dam three hundred and fifty feet in length, with a guard lock, having a towing-path bridge across it. The structures are: one stone lift lock; fourteen composite lift locks; one guard lock; two dams; seven waste-weirs; five wooden trunk aqueducts; three iron bridges; fifty-five wooden bridges; ten arch culverts; one bridge on feeder.

The expenditures upon this section during the fiscal year were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor....	$18,000 00
For repairs of Greene aqueduct.........	109 58
For balance account repair breaches	204 00

For a swing-bridge at Hawley street, Binghamton	$2,385 37	
		$20,698 95
Miscellaneous, salaries, &c		536 95
Disbursements by Division Engineer		207 71
Salary of Superintendent		1,000 00
Total expenditures on section No. 3		$22,443 61

CHEMUNG CANAL.

GEO. O'HANLON, *Superintendent.* JARVIS LORD, *Repair Contractor.*

This canal extends from the head of Seneca lake, at Watkins, to Elmira, including the feeder from Horseheads to Knoxville, making a total distance of thirty-nine miles of navigable canal.

The structures are: two composite locks; thirteen timber locks; one timber guard lock; thirty-eight old timber locks; four aqueducts; thirteen waste-weirs; two culverts; one dam and bulkhead; three road bridges, iron; thirty-five road bridges, wood; fourteen farm bridges; one towing-path bridge, wood; one towing-path bridge across Chemung river.

The expenditures upon this canal during the fiscal year were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor	$36,000 00	
For extra compensation for sinking foundation of lock No. 1, chap. 579, Laws 1867	6,221 00	
On account of pier at Watkins	22,627 00	
For miscellaneous, engineering accounts, resolution Canal Board, June 12, 1869.	332 92	
For iron bridge at Baldwin street, Elmira	5,597 35	
		$70,778 27
Miscellaneous, salaries, &c		2,972 81
Disbursements by Division Engineer		623 13
Salary of Superintendent		1,000 00
Total expenditures on canal		$75,374 21

CAYUGA AND SENECA CANAL.

F. GAGE, *Superintendent.* GEORGE M. CASE, *Repair Contractor.*

This canal extends from the Erie, at Montezuma, to Seneca lake, at Geneva, with a branch from lock nine to East Cayuga, at the foot of Cayuga lake. Total miles in length, twenty-three.

The structures are: eleven composite lift locks; one side lock at Seneca Falls; nine culverts; one pier at foot of Cayuga lake; one pier at foot of Seneca lake; seven iron bridges; fifteen wood bridges; five dams.

The expenditures upon this canal, during the fiscal year, were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor ...	$20,000 00	
For iron bridge, outlet Seneca lake, chap. 329, Laws of 1868	2,438 37	
On account of pier at Geneva	5,100 00	
		$27,538 37
Miscellaneous, salaries, &c		648 92
Disbursements by Division Engineer		509 77
Salary of Superintendent		1,000 00
Total expenditures on canal		$29,697 06

CROOKED LAKE CANAL.

E. R. RANDAL, *Superintendent.* O. C. KNAPP, *Repair Contractor.*

This canal extends from Crooked lake, near Penn Yan, to Seneca lake, at Dresden, distance eight miles. The structures are: twenty-seven lift locks; one guard lock; six waste-weirs; two culverts; fourteen bridges; four dams.

The expenditures upon this canal, during the fiscal year, were as follows:

DRAFTS ON AUDITOR.

For compensation of repair contractor ...	$6,035 98	
For rebuilding locks 12, 13, 24 and 27 ...	36,786 26	
For rebuilding bridge at Liberty street, Penn Yan, on change of plan; difference in cost	316 31	
Balance on account of rebuilding lock No. 15	1,451 99	
Balance on account of rebuilding lock No. 16	1,080 85	
Balance on account of rebuilding lock No. 17	1,917 19	
Per resolution, Canal Board, April 6, 1869	269 00	
		$47,857 58
Miscellaneous, salaries, &c		1,582 32
Disbursements by Division Engineer		513 32
Salary of Superintendent		800 00
Total expenditures on canal		$50,753 27

ONEIDA LAKE CANAL.

This canal, when completed, will connect the Erie canal with the waters of the Oneida lake, furnishing thirty miles of lake navigation, intersecting the Oneida river improvement, which forms a junction with the Oswego canal at Three River Point.

The expenditures for construction during the fiscal year were as follows:

DRAFTS ON AUDITOR.

On account of section No. 1	$8,959 00	
On account of section No. 2	19,752 00	
On account of section No. 3	13,906 00	
On account of section No. 4	21,862 00	
On account of section No. 5	16,728 00	
		$81,207 00
Miscellaneous, printing		150 00
Dibursements by Division Engineer for engineering		7,021 67
Total expenditures on canal		$88,378 67

CHENANGO CANAL EXTENSION.

The expenditures upon this work during the fiscal year, were as follows:

DRAFTS ON AUDITOR.

On account of section No. 1, including $35,000 for Rock Bottom Mills, as per report to and resolution of Canal Board, passed July 21, 1869	$40,032 00
On account of section No. 2	15,776 00
On account of section No. 3	5,066 00
On account of section No. 4	28,832 00
On account of section No. 5	6,086 00
On account of section No. 6	10,593 89
On account of section No. 7	
On account of section No. 8	
On account of section No. 9	
On account of section No. 10	8,143 00
On account of section No. 11	
On account of section No. 12	
On account of section No. 13	
On account of section No. 14	9,222 72
On account of section No. 15	5,939 80
On account of section No. 16	
On account of section No. 17	11,271 00
On account of section No. 18	12,716 00
On account of section No. 19	

On account of section No. 20	$14,399 00	
On account of section No. 21	14,212 00	
On account of section No. 24	920 20	
On account of lock No. 5	8,245 00	
On account of Apalachin creek aqueduct	2,720 00	
On account of Tracy creek aqueduct	5,957 00	
On account of Choconut creek aqueduct	1,445 00	
On account of culverts on sections Nos. 1 to 20, inclusive	8,959 00	
On account of culverts on sections Nos. 21 to 30, inclusive	11,979 00	
On account of culverts on sections Nos. 1 to 5, inclusive (old contract)	104 44	
On account of bridges on sections Nos. 6 to 10, per resolution of Canal Board, July 14, 1869	608 46	
On account of raising towing-path on sections Nos. 12, 13, 16, 22 and 23	816 00	
		$224,043 51
Micellaneous, temporary damages, &c		1,420 83
Disbursements by Resident Engineer for engineering		18,476 20
Total payments during fiscal year		$243,940 54

LAND DAMAGES.

STATEMENT showing payments on account of awards made by the Canal Appraisers, for land damages, for the fiscal year ending September 30, 1869.

DATE.	TO WHOM PAID.	ACCOUNT OF WHAT CANAL.			
		Erie.	Oswego.	Cayuga and Seneca.	Oneida Riv. Improvem't.
Oct. 1...	Samuel A. Gould	....	....	$1,284 00	....
	John A. Rumsey	....	....	1,200 00	....
Oct. 20...	Royal A. Torrey	$4,310 00	....	....	....
Dec. 1..	Scott & Nesbitt	....	$939 25	....	....
	James Barse	....	....	....	$637 00
	Louisa Brigham	....	....	....	765 00
	Curtis Coe	115 00	....	....	....
Dec. 21..	Mary Hinman	....	790 94	....	....
	Philip Sanford	....	....	....	1,489 20
	Hiram Hill	....	....	....	398 44
	Joseph I. Cook	....	....	....	1,988 05
	Sanford J. Gleason	....	....	....	1,573 35
	William W. Teall	....	....	....	5,925 00
Jan. 1..	Ira Peck	4,529 48	....	....	....
	Isaac Fereet	....	....	....	510 00
	Cornelia Gifford	....	....	....	1,106 60
	Patrick Kaul	....	....	....	1,382 52
	Martin N. Traver	....	....	....	560 82
	James Dixon	....	....	....	1,504 50
	James D. Spencer	....	....	....	2,014 75
	Estate Joseph Edwards	150 00	....	....	....
	Estate Rite Kinne	128 00	....	....	....
	E. A. Dodge	....	....	250 00	....
	George W. Demont	....	....	40 00	....
	Lucy Chaphee	500 00	....	....	....
	David Helmer	50 00	....	....	....
Mar. 1...	Samuel Rulford	1,200 00	....	....	....
	Sullivan Brigham	....	....	....	1,100 00
	Silas Bailey	....	....	....	2,000 00
	Jacob L. Bowman	....	....	....	1,147 50
	John Eggleston	....	....	....	1,890 38
	Andrew Cock	....	....	....	2,893 40
	Estate John Roberts	....	....	....	1,383 35
	John Wheeler	....	....	....	1,070 57
July 1...	Clark Damon	....	....	....	318 70
	Totals	$10,982 48	$1,730 00	$2,774 00	$31,659 13

EXPENDITURES FROM GENERAL FUND.

For the improvement of the inlet, at Ithaca, pursuant to chap. 822, Laws of 1869	$3,653 52

GENERAL SUMMARY.

ERIE CANAL.

Total expenditures on section No. 7	$15,321 22	
Total expenditures on section No. 8	45,840 71	
Total expenditures on section No. 9	46,388 30	
		$107,550 23

OSWEGO CANAL.

Total expenditures on section No. 1	$32,407 47	
Total expenditures on section No. 2	117,389 05	
		149,796 52

CHENANGO CANAL.

Total expenditures on section No. 1	$27,436 56	
Total expenditures on section No. 2	11,652 80	
Total expenditures on section No. 3	22,443 61	
		$61,532 97

CHEMUNG CANAL.

Total expenditures	75,374 21

CAYUGA AND SENECA CANAL.

Total expenditures	29,697 06

CROOKED LAKE CANAL.

Total expenditures	50,753 27

ONEIDA LAKE CANAL.

Total expenditures	88,378 67

CHENANGO CANAL EXTENSION.

Total expenditures	243,940 54

AWARDS CANAL APPRAISERS.

Total payments....................................	47,145 61

FROM GENERAL FUND.

Total	3,653 52
Grand total expenditures on middle division.....	$857,822 69

STATEMENT of work under contract upon the Middle Division of the New York State canals for the fiscal year ending September 31st, 1869.

ERIE CANAL.

CHARACTER OF WORK.	Appropriation.	When let.	When to be completed.	Engineers' estimate.	Estimated cost at contractors' prices.	Amount done during fiscal year.	Total amount done.	Amount remaining to be done.	Remarks.
Culvert under Erie canal at Canastota	$4,000	June 18, '67	April 1, '68	$4,000	$3,096 18	$3,096 18	$3,096 18	Settled.	
Protecting channel at Skaneateles	7,000	July 22, '68	Sept. 1, '68	7,000	5,193 30	5,193 30	5,193 30	Settled.	
Otisco lake reservoir	42,000	Oct. 1, '68	April 20, '69	42,000	32,504 00	17,000 00	17,000 00	$15,504 00	
Improvement Owasco lake outlet	21,500	July 22, '68	Jan. 1, '69	21,500	13,725 00	7,920 00	7,920 00	5,805 00	
Vertical wall west of lock 49	6,000	Oct. 1, '68	April 20, '69	6,000	5,999 97	5,999 97	5,999 97	Settled.	
Vertical wall at Geddes	2,000	Oct. 1, '68	April 20, '69	2,000	1,805 85	1,805 85	1,805 85	Settled.	
Raising berme bank near lock 50	6,000	July 14, '69	Dec. 1, '69	6,000	4,925 00	540 00	540 00	4,385 00	
Filling packet boat basin at Syracuse	3,000	July 14, '69	Dec. 1, '69	3,000	1,360 00	....	....	1,360 00	
Straightening, &c., Chittenango creek ch'nel	5,000	July 14, '69	Dec. 1, '69	....	....	....	....	... .	
Removing waste weir, &c., at Cowasselon creek	16,000	July 14, '69	April 1, '70	....	....	....	....	....	
Protecting highway, &c., at De Ruyter res'r	1,500	July 14, '69	Dec. 1, '69	1,500	925 00	....	....	925 00	
Rebuilding iron bridge at Warren street, Syracuse	11,000	July 14, '69	Dec. 1, '69	11,000	9,963 00	....	....	9,963 00	
Rebuilding iron bridge at Lock street, Syracuse	7,000	July 14, '69	Dec. 1, '69	7,000	6,720 00	....	....	6,720 00	
Removing wall benches on Jordan level	40,000	July 14, '69	April 1, '70	... .	....	....	....	....	
Removing wall benches on Syracuse level	20,000	July 14, '69	April 1, '70	20,000	14,469 00	....	....	14,469 00	
Removing wall benches on Long level	10,000	July 14, '69	April 1, '70	10,000	7,397 00	....	....	7,397 00	
Rebuilding culvert near Burdick's bridge	3,000	Sept. 23, '69	April 1, '70	....	....	....	....	....	Not entered into contract.
Well and receiver at discharge weigh lock sewer	5,500	Sept. 23, '69	April 1, '70	....	....	....	....	....	Not awarded.
Bottoming down east of lock 47	40,000	....	....	....	....	....	....	....	Given to repair contractor, per act chap. 877, Laws 1869.
Total	....	....	....	$141,000	$108,083 30	$41,555 30	$41,555 30	$66,528 00	
OSWEGO CANAL.									
Stone dam at Braddock's rapids, Osw'go riv.	$80,500	Dec. 30, '65	Dec. 1 '67	$80,500	$69,160 12	$11,040 12	$69,160 12	Settled.	
Stone dam at Minett's, Oswego river	106,100	Nov. 14, '66	Dec. 1 '67	106,100	76,565 00	24,120 00	48,960 00	$27,605 00	Incre'd by Canal B. $11,700.
Berme bank in Oswego river	180,000	Aug. 31, '64	April 1 '68	180,000	180,000 00	9,680 00	173,300 00	6,700 00	
Rebuilding high dam in Oswego river	40,000	July 14, '69	Nov. 1, '70	111,000	70,584 00	....	....	70,584 00	
Rebuilding bulkhead at Farwell's mill	4,000	July 14, '69	April 1, '70	4,000	2,275 00	....	....	2,275 00	
Deepening Oswego river at Oswego	13,000	July 14, '69	Dec. 1, '69	14,500	9,600 00	....	....	9,600 00	
Vertical wall on enlargement section No. 4	4,000	July 14, '69	April 1, '70	4,000	2,490 00	....	....	2,490 00	
Raising banks, &c., of Oswego canal	21,000	July 14, '69	Dec. 1, '69	21,000	13,570 00	2,000 00	2,000 00	11,570 00	
Rebuilding docks on side-cuts at Salina	15,000	July 14, '69	Dec. 1, '69	15,000	9,750 00	....	....	9,750 00	

Iron bridge at First street, Fulton	4,000	July 14, '69	Dec. 1, '69	4,000	2,568 75	....	....	2,868 00	
Iron bridge at Division street, Syracuse	3,400	July 27, '69	Dec. 1, '69	3,400	3,468 75	....	....	3,468 75	
Iron bridge at Cold Spring	7,000	July 14, '69	Dec. 1, '69	7,000	4,716 00	....	....	4,716 00	
Building 400 feet of docks at Green Point	2,100	July 22, '68	April 1, '69	2,100	2,026 00	2,026 00	2,026 00	Settled.	
Total	....	....	....	$552,600	$44,706 87	$48,866 12	$395,446 12	$151,621 75	

CAYUGA AND SENECA CANAL.

Pier at Geneva	$20,837	July 22, '68	Dec. 1, '68	$20,837	$14,798 00	$9,000 00	$9,000 00	$5,798 00	Increased by Canal B. $837
Rebuilding locks 2, 3, 9 and 11	25,000	July 14, '69	April 1, '70	25,000	27,446 00	....	....	27,446 00	
Dredging channel, &c., at Cayuga inlet, at Ithaca	15,000	Sept. 23, '69	Sept. 1, '70	12,000	....	....	....	....	
Iron bridge at Ovid street, Seneca Falls	7,000	Sept. 23, '69	April 1, '70	5,800	....	....	....	....	Not awarded.
Iron needle beams in bridges at Geneva and Waterloo	3,000	July 27, '69	Nov. 1, '69	3,000	....	....	....	....	Not awarded.
Total	....	....	....	$66,637	$42,244 00	$9,000 00	$9,000 00	$33,244 00	

CROOKED LAKE CANAL.

Repairing locks 12, 13, 24 and 27	$40,000	July 22, '68	April 1, '69	$40,000	$36,786 26	$36,786 26	$36,786 26	Settled.	
Repairing lock 15	21,666	Aug. 7, '67	April 1, '69	7,222	6,806 99	506 99	6,806 99	Settled.	
Repairing lock 16		Aug. 7, '67	April 1, '68	7,222	7,217 85	....	7,217 85	Settled.	
Repairing lock 17		Aug. 7, '67	April 1, '68	7,222	7,102 19	1,102 19	7,102 19	Settled.	
Total	... ...	....	....	$61,666	$57,913 29	$38,395 44	$57,913 29	....	

CHEMUNG CANAL.

Pier at Watkins	$30,000	July 22, '68	Dec. 1, '68	$30,000	$29,998 81	$29,998 81	$29,998 81	Settled.	
Dredging from lock 1 to Seneca lake	15,000	Sept. 23, '69	Sept. 1, '70	10,750	....	....	....	....	Not entered into contract.
Cleaning out State ditch on farm of M. Sayre, &c		July 14, '69	Dec. 1, '69	4,700	3,374 00	....	....	$3,374 00	
Total	....	....	....	$45,450	$33,372 81	$29,998 81	$29,998 81	$3,374 00	

CHENANGO CANAL.

Rebuilding lock No. 18	$11,000	Jan. 5, '69	April 20, '69	$11,000	$13,167 50	....	....	$13,167 50	
Rebuilding lock No. 19	13,000	Jan. 5, '69	April 20, '69	13,000	15,090 00	....	....	15,090 00	
Rebuilding lock No. 22	12,000	Jan. 5, '69	April 20, '69	12,000	14,240 00	....	....	14,240 00	
Rebuilding lock No. 105	10,000	Oct. 16, '65	April 1, '66	10,000	6,701 00	....	....	6,701 00	
Rebuilding lock No. 106	9,000	Oct. 16, '65	April 1, '66	9,000	5,747 00	....	....	5,747 00	
Rebuilding lock No. 107	12,500	Oct. 16, '65	April 1, '66	12,500	9,669 00	....	....	9,669 00	
Swing bridge at Canal street, Norwich	3,000	Sept. 23, '69	April 1, '70	3,000	1,962 50	....	....	1,962 50	
Iron bridge at Genesee street, Greene	5,000	Sept. 23, '69	April 1, '70	5,000	3,884 50	....	....	3,884 50	
Total	....	....	....	$75,500	$70,461 50	....	....	$70,461 50	

Statement—(Continued).

ONEIDA LAKE CANAL.

CHARACTER OF WORK.	Appropriation.	When let.	When to be completed.	Engineers' estimate.	Estimated cost at contractors' prices.	Amount done during fiscal year.	Total amount done.	Amount remaining to be done.	Remarks.
Section No. 1	......	Dec. 18, '67	July 1, '69	$306,000	$32,500 00	$9,360 00	$21,060 00	$11,440 00	
Section No. 2	....	Dec. 18, '67	July 1, '69		46,000 00	23,740 00	27,880 00	18,120 00	
Section No. 3	....	Dec. 18, '67	July 1, '69		56,000 00	16,860 00	19,960 00	36,040 00	
Section No. 4	....	Dec. 18, '67	July 1, '69		55,500 00	29,520 00	37,420 00	18,080 00	
Section No. 5	....	Dec. 18, '67	July 1, '69		68,000 00	20,280 00	25,000 00	43,000 00	
Total	....	....	....	$306,000	$258,000 00	$99,760 00	$131,320 00	$126,680 00	

BALDWINSVILLE CANAL.

CHARACTER OF WORK.	Appropriation.	When let.	When to be completed.	Engineers' estimate.	Estimated cost at contractors' prices.	Amount done during fiscal year.	Total amount done.	Amount remaining to be done.	Remarks.
Iron bridge at Bridge street, Baldwinsville.	$6,500	July 14, '69	Dec. 1, '69	$6,500	$4,360 00	$1,520 00	$1,520 00	$2,840 00	
Total	....	....	....	$6,500	$4,360 00	$1,520 00	$1,520 00	$2,840 00	

Statement—(Continued).

EXTENSION OF THE CHENANGO CANAL.

Length in Chains.	CHARACTER OF WORK.	Appropriation.	When let.	When to be completed.	Engineer's estimate.	Estimated cost at contract prices.	Amount done during fiscal year.	Total amount done.	Amount remaining to be done.	Remarks.
62	Section No. 1	......	June 22, '65	Sept. 1, '66	$7,878 89	$7,878 89	....	$7,878 89	....	Canceled October, 1867.
....	Section No. 1	......	July 29, '68	April 1, '70	14,690 00	9,487 50	$8,080 00	8,080 00	$1,407 50	Relet.
71	Section No. 2	......	June 22, '65	Sept. 1, '66	29,086 37	29,086 37	....	29,086 37	....	Canceled October, 1867.
....	Section No. 2	......	July 29, '68	April 1, '70	43,980 00	37,537 50	23,060 00	23,060 00	14,477 50	Relet.
80	Section No. 3	......	June 22, '65	Sept. 1, '66	30,385 72	30,385 72	....	30,385 72	....	Canceled October, 1862.
....	Section No. 3	......	July 29, '68	April 1, '70	28,000 00	23,257 50	5,960 00	5,960 00	17,297 50	Relet.
80	Section No. 4	......	June 22, '65	Sept. 1, '66	40,523 61	40,523 61	....	40,523 61	....	Canceled October, 1867.
....	Section No. 4	......	July 29, '68	April 1, '70	44,720 00	49,100 00	37,520 00	40,300 00	8,800 00	Relet.
90	Section No. 5	......	June 22, '65	Sept. 1, '66	57,485 02	57,485 02	....	57,485 02	....	Canceled October, 1867.
....	Section No. 5	......	July 29, '68	April 1, '70	29,900 00	18,400 00	6,660 00	8,660 00	9,740 00	Relet.
90	Section No. 6	......	June 22, '65	Sept. 1, '66	39,227 81	39,227 81	....	39,227 81	....	Canceled October, 1867.
....	Section No. 6	......	July 29, '68	April 1, '70	10,593 89	10,593 89	10,593 89	10,593 89	....	Relet and canceled.
....	Section No. 6 and refinishing section 7	......	July 14, '69	Nov. 1, '70	24,000 00	19,239 00	....	....	19,239 00	Relet.
80	Section No. 7	......	June 22, '65	Sept. 1, '66	43,095 00	31,726 85	....	31,726 85	....	Completed.
80	Section No. 8	......	June 22, '65	Sept. 1, '66	21,185 00	29,626 93	....	29,626 93	....	Completed.
80	Section No. 9	......	June 22, '65	Sept. 1, '66	12,745 00	19,427 52	....	19,427 52	....	Completed.
80	Section No. 10	......	June 22, '65	Sept. 1, '66	6,692 62	6,692 62	....	6,692 62	....	Canceled October, 1867.
....	Section No. 10	......	July 29, '68	April 1, '70	13,100 00	14,080 00	12,080 00	12,080 00	2,000 00	Relet.
76	Section No. 11	......	Feb. 7, '66	Sept. 1, '67	30,650 00	28,048 89	....	28,048 89	....	Completed.
81	Section No. 12	......	Feb. 7, '66	Sept. 1, '67	17,050 00	18,500 86	....	18,500 86	....	Completed.
80	Section No. 13	......	Feb. 7, '66	Sept. 1, '67	12,130 00	8,284 47	....	8,284 47	....	Completed.
80	Section No. 14	......	Feb. 7, '66	Sept. 1, '67	13,080 16	13,080 60	....	13,080 16	....	Canceled October, 1867.
....	Section No. 14	......	July 29, '68	April 1, '70	10,210 00	9,222 72	7,102 72	9,222 72	....	Relet and completed.
80	Section No. 15	......	Feb. 7, '66	Sept. 1, '67	9,008 86	9,008 86	....	9,008 86	....	Canceled October, 1867.
....	Section No. 15	......	July 29, '68	April 1, '70	10,850 00	6,939 80	6,939 80	6,939 80	....	Relet and completed.
80	Section No. 16	......	Feb. 7, '66	Sept. 1, '67	22,650 00	13,455 68	....	13,455 68	....	Completed.
82	Section No. 17	......	Feb. 7, '66	Sept. 1, '67	18,430 45	18,430 45	....	18,430 45	....	Canceled October, 1867.
....	Section No. 17	......	July 29, '68	April 1, '70	25,700 00	17,840 00	13,020 00	13,260 00	4,580 00	Relet.
88	Section No. 18	......	Feb. 7, '66	Sept. 1, '67	36,311 34	36,311 34	....	36,311 34	....	Canceled October, 1867.
....	Section No. 18	......	July 29, '68	April 1, '70	39,000 00	26,280 00	14,960 00	14,960 00	11,320 00	Relet.
80	Section No. 19	......	Feb. 7, '66	Sept. 1, '67	10,650 00	11,280 50	....	11,280 50	....	Completed.
80	Section No. 20	......	Feb. 7, '66	Sept. 1, '67	23,700 00	28,000 00	14,400 00	25,300 00	2,700 00	Old contract running.
80	Section No. 21	......	June 15, '66	May 1, '67	10,830 46	10,830 46	....	10,830 46	....	Canceled October, 1867.
....	Section No. 21	......	July 29, '68	April 1, '70	36,700 00	28,200 00	13,960 00	17,220 00	10,980 00	Relet.
79	Section No. 22	......	June 15, '66	May 1, '67	65,100 00	76,271 86	....	76,271 86	....	Completed.
85	Section No. 23	......	June 15, '66	May 1, '67	12,050 00	29,219 55	....	29,219 55	....	Completed.
79	Section No. 24	......	June 25, '66	May 1, '67	9,369 20	9,369 20	....	9,369 20	....	Canceled.

Statement—(Continued).

Length in Chains.	CHARACTER OF WORK.	Appropriation.	When let.	When to be completed.	Engineer's estimate.	Estimated cost at contract prices.	Amount done during fiscal year.	Total amount done.	Amount remaining to be done.	Remarks.
....	Section No. 24	......	Sept. 28, '69	Nov. 1, '70	$45,000 00	$21,916 00	....	....	$21,916 00	Relet.
82	Section No. 25	......	June 15, '66	May 1, '67	3,426 79	3,426 79	....	$3,426 79	....	Canceled October, 1867.
....	Section No. 25	......	Sept. 23, '69	Nov. 1, '70	22,000 00	9,350 00	....	....	9,350 00	Relet.
84	Section No. 26	......	June 25, '66	May 1, '67	108,455 66	108,455 66	....	108,405 66	....	Canceled October, 1867.
....	Section No. 26 and refinishing section 27	......	Sept. 23, '69	Nov. 1, '70	73,000 00	25,952 00	....	....	25,952 00	Relet.
80	Section No. 27	......	June 15, '66	May 1, '67	10,528 51	10,528 51	....	10,528 51	....	Canceled October, 1867.
85	Section No. 28	......	June 25, '66	May 1, '67	16,700 00	16,520 00	....	....	16,520 00	Old contract running.
80	Section No. 29	......	June 25, '66	May 1, '67	10,910 01	10,910 01	....	10,910 01	....	Canceled October, 1867.
....	Sec. No. 29 and refinish'g sec. 30	......	Sept. 23, '69	Nov. 1, '70	24,000 00	5,476 50	....	....	5,476 50	Relet.
87	Section No. 30	......	June 15, '66	May 1, '67	5,000 28	5,005 28	....	5,005 28	....	Canceled October, 1867.
33	River bank on towing path sec'n	......	July 14, '69	Nov. 1, '70	34,000 00	18,000 00	....	....	18,000 00	
....	Raising tow path on sections 12, 13, 16, 22 and 23	......	July 14, '69	Nov. 1, '70	18,000 00	9,000 00	$3,380 00	3,380 00	5,620 00	
....	Lock No. 1	......	June 22, '65	Sept. 1, '66	12,247 00	11,236 00	....	2,000 00	9,236 00	Old contr'ct runn'g with locks abandoned and merged into Nos. 1 & 3.
....	Lock No. 2	......	June 22, '65	Sept. 1, '66	11,872 00	10,775 00	....	2,240 00	8,535 00	
....	Lock No. 3	......	June 22, '65	Sept. 1, '66	12,822 00	12,031 00	....	1,860 00	10,171 00	
....	Lock No. 4	......	Feb. 7, '66	Sept. 1, '67	4,457 34	4,457 34	....	4,457 34	....	Canceled October, 1867.
....	Lock No. 4	......	July 14, '69	Nov. 1, '70	13,000 00	11,090 00	....	....	11,000 00	Relet.
....	Lock No. 5	......	Feb. 7, '66	Sept. 1, '67	12,995 00	14,000 00	9,700 00	12,680 00	1,320 00	Canceled Oct., 1867. Rescinded.
....	Lock No. 6	......	July 14, '69	Nov. 1, '70	20,000 00	13,000 00	....	....	13,000 00	
....	Locks Nos. 7 and 8	......	Sept. 23, '69	Nov. 1, '70	31,000 00	23,879 00	....	....	23,879 00	
....	Choconut creek aqueduct	......	Feb. 7, '66	Sept. 1, '67	17,007 16	17,007 16	....	17,007 16	....	Canceled October, 1867.
....	Choconut creek aqueduct	......	July 14, '69	Nov. 1, '70	35,000 00	21,508 00	7,400 00	7,400 00	14,108 00	Relet.
....	Tracy creek aqueduct	......	Feb. 7, '66	Sept. 1, '67	20,936 00	25,700 05	11,620 00	15,000 00	10,700 00	Old contract running.
....	Apalachin creek aqueduct	......	Feb. 7, '66	Sept. 1, '67	35,000 00	31,000 00	8,800 00	22,100 00	8,900 00	Canceled Oct., 1867. Rescinded.
....	Archibald creek aqueduct	......	Sept. 23, '69	Nov. 1, '70	15,000 00	6,969 00	....	....	6,969 00	
....	Culverts on sections 1 to 5	......	June 22, '65	Sept. 1, '66	444 44	444 44	....	444 44	....	Canceled October, 1867.
....	Culverts on sections 6 to 10	......	June 22, '65	Sept. 1, '66	12,511 40	12,511 40	....	12,511 40	....	Canceled October, 1867.
....	Culverts on sections 11 to 20	......	Feb. 7, '66	Sept. 1, '67	17,738 85	17,738 85	....	17,738 85	....	Canceled October, 1867.
....	Culverts on sections 1 to 20	......	July 29, '68	April 1, '70	18,250 00	12,684 00	10,500 00	12,220 00	464 00	Relet.
....	Culverts on sections 21 to 30	......	June 15, '66	May 1, '67	16,695 00	35,000 00	22,240 00	25,600 00	9,400 00	Old contract running,
....	Bridges on sections 1 to 5	......	June 22, '65	Sept. 1, '66	4,113 40	4,113 40	....	4,113 40	....	Canceled.
....	Bridges on sections 6 to 10	......	June 22, '65	Sept. 1, '66	4,263 46	4,263 46	....	4,263 46	....	Canceled.
....	Bridges on sections 1 to 10	......	July 14, '69	Nov. 1, '70	23,000 00	16,000 00	....	....	16,000 00	Relet.
....	Bridges on sections 11 to 23	......	July 14, '69	Nov. 1, '70	39,000 00	32,000 00	700 00	700 00	31,300 00	
....	Bridges on sections 24 to 30	......	Sept. 23, '69	Nov. 1, '70	28,000 00	14,374 00	....	....	14,374 00	
	Total	......	....	....	$1,687,138 70	$1,468,564 33	$248,676 41	$1,073,832 33	$394,732 00	

STATEMENT of work not under contract upon the extension of the Chenango canal at the close of fiscal year, September 30*th*, 1869.

Length in Chains.	CHARACTER OF WORK.	Engineer's estimate.	Remarks.
80	Section No. 31	$15, 250 00	Never let.
80	Section No. 32	20, 200 00	Never let.
80	Section No. 33	19, 250 00	Never let.
80	Section No. 34	18, 000 00	Never let.
80	Section No. 35	24, 000 00	Never let.
80	Section No. 36	21, 750 00	Never let.
84	Section No. 37	20, 300 00	Never let.
80	Section No. 38	13, 650 00	Never let.
62	Section No. 39	10, 250 00	Never let.
....	Dam and guard lock	100, 000 00	Let but not awarded.
....	Lift lock No. 9	13, 295 00	Never let.
....	Lift lock No. 10	18, 725 00	Never let.
....	Lift lock No. 11	12, 995 00	Never let.
....	Wappasena creek aqueduct	13, 391 00	Never let.
....	Little Wappasena creek aqueduct	10, 662 00	Never let.
....	Parks creek aqueduct	9, 136 00	Never let.
....	Five waste weirs	10, 000 00	Never let.
	Total	$350, 854 00	

STATEMENT of authorized miscellaneous repairs for the fiscal year ending September 30th, 1869.

ERIE CANAL.

CHARACTER OF WORK.	How authorized.	Amount of appropriation or engineer's estimate.	Amount done.	Amount paid.	Remarks.
Iron bridge superstructure over State canal at Cazenovia	Act chap. 417, Laws of 1868	$1,500 00	$1,606 50	$1,423 85	Old structure deducted.
Iron bridge superstructure at Geddes street, Syracuse	By Commissioner upon change of plan	2,071 10	2,464 00	2,071 20	Old structure deducted.
Wrought iron girder bridges over outlet, Skaneateles	Act chap. 316, Laws of 1867	4,500 00	5,032 61	4,500 00	Old structure deducted.
Inserting iron needle beams in bridge at Salina street, Syracuse	Act chap. 877, Laws of 1869	2,130 11	2,357 81	2,130 11	Old structure deducted.
Inserting iron needle beams in bridges at Port Byron and Weedsport	By Commissioner upon change of plan	1,327 67	1,478 27	1,327 67	Old structure deducted.
Repairing bank at west end of Oneida creek aqueduct	By Commissioner upon change of plan	898 50	1,101 00	898 50	Restori'g w'rk as before deduc'd.
Dredging upon Jordan level	By Commissioner under repair contract	1,373 65	1,831 54	1,373 65	Excavat'n above bottom deduc'd.
Widening both locks (Lock No. 49)	By Canal Board under repair contract	15,000 00	26,497 71	14,873 40	Stone from old walls deducted.
		$28,801 03	$42,369 44	$28,598 28	

CHENANGO CANAL.

CHARACTER OF WORK.	How authorized.	Amount of appropriation or engineer's estimate.	Amount done.	Amount paid.	Remarks.
Iron bridge superstructure at Lebanon st., Hamilton	Act chap. 692, Laws of 1867	$3,500 00	$3,071 56	$2,532 06	Old structure deducted.
Iron bridge superstructure at Eaton st., Hamilton	Act chap. 418, Laws of 1868	3,500 00	3,446 40	2,941 40	Old structure deducted.
Iron chord superstructure at Clinton	By Commissioner upon change of plan	949 04	1,457 04	949 04	Old structure deducted.
Iron bridge at Hawley st., Binghamton	Act chap. 421, Laws of 1868	2,000 00	3,133 37	2,000 00	
	Act chap. 877, Laws of 1869	385 37	....	385 37	
		$10,334 41	$11,108 37	$8,807 87	

OSWEGO CANAL.

CHARACTER OF WORK.	How authorized.	Amount of appropriation or engineer's estimate.	Amount done.	Amount paid.	Remarks.
Inserting iron needle beams in bridge at Salina st., Syracuse	By Commissioner upon change of plan	$3,044 90	$3,392 40	$3,044 90	Old structure deducted.
Inserting iron needle beams in bridge at First st., Fulton	By Commissioner upon change of plan	1,417 11	1,794 21	1,417 11	Old structure deducted.
Inserting iron needle beams in bridge at Willow st., Syracuse	By Commissioner upon change of plan	1,744 28	2,042 88	1,744 28	Old structure deducted.
Iron bridge at Utica st., Oswego	Act chap. 715, Laws of 1868	14,000 00	14,319 50	13,843 00	Materials in old changed.
Repairing apron of Phœnix dam	By Commissioner upon change of plan	2,512 62	3,030 22	2,512 62	Restoring work as before deducted.
Raising bank at guard lock No. 2	Act chap. 715, Laws of 1868	4,000 05	4,000 05	4,000 05	
		$26,718 96	$28,509 26	$26,561 96	

	CAYUGA AND SENECA CANAL.				
Iron bridge superstructure over outlet of Seneca lake	Act chap. 329, Laws 1868	$3, 600 00	$2, 889 98	$2, 488 87	Old structure deducted.
	CROOKED LAKE CANAL.				
Wood bridge superstructure at Penn Yan	By Commissioner upon change of plan	$316 31	$838 71	$316 31	Old structure deducted.
	CHEMUNG CANAL.				
Iron bridge at Baldwin street, Elmira	By Commissioner upon change of plan	$5, 597 85	$6, 095 47	$5, 597 85	Old structure deducted.

SUMMARY of amount of work done during fiscal year.

CANAL.	Work under contract.	Work upon miscellaneous repairs.	Total.
Erie	$41,555 30	$42,369 44	$83,924 74
Oswego	50,386 12	28,509 26	78,895 38
Cayuga and Seneca	9,000 00	2,889 98	11,889 98
Crooked lake	38,395 44	838 71	39,234 15
Chemung	29,998 81	6,093 47	36,092 28
Chenango		11,108 37	11,108 37
Oneida lake	99,760 00		99,760 00
Extension of the Chenango	248,676 41		248,676 41
Total	$517,772 08	$91,809 18	$609,581 26

STATEMENT of lockages at each check lock from the opening of navigation to September 30, 1869.

MONTH.	ERIE CANAL.				OSWEGO CANAL.				CAYUGA AND SENECA CANAL.					
	Lock 49.		Lock 50.		Lock 1.		Lock 18.		Lock 2.		Lock 9.		Lock 11.	
	E.	W.	E.	W.	N.	S.	N.	S.	E.	W.	E.	W.	N.	S.
May	1,286	1,358	1,072	1,138	594	680	502	492	563	511	536	518	164	157
June	1,968	1,797	1,820	1,752	756	778	559	624	873	831	828	879	117	111
July	1,983	1,647	1,773	1,450	689	765	542	575	788	668	666	685	112	113
August	2,171	1,847	1,979	1,625	708	735	615	707	750	730	720	780	105	132
September	1,516	1,593	1,347	1,492	676	703	520	750	716	478	664	582	158	129
Total	8,924	8,242	7,991	7,457	3,423	3,661	2,738	3,148	3,690	3,218	3,414	3,444	656	642

MONTH.	CHEMUNG CANAL.						CROOKED LAKE CANAL.				CHENANGO CANAL.					
	Lock 1.		Lock 45.		Lock 49.		Lock 1.		Guard L.		Lock 1.		Lock 93.		Lock 111.	
	N.	S.	N.	S.	E.	W.	E.	W.	E.	W.	N.	S.	N.	S.	N.	S.
May	174	84	98	51	94	67	35	16	43	17	110	117	150	132	181	154
June	153	126	96	83	112	85	35	20	41	21	184	159	166	151	203	190
July	127	126	90	103	70	66	35	17	30	26	101	80	75	84	69	57
August	177	152	153	157	83	74	18	15	14	19	133	135	72	66	77	70
September	211	192	170	151	52	66	16	24	19	21	134	133	160	141	266	245
Total	842	680	607	545	411	358	139	92	147	104	662	624	623	574	796	716

WESTERN DIVISION.

Canal Commissioner's Office,
Rochester, *December* 10, 1869.

The Commissioner in charge of the Western Division of the canals, presents the following report of said division for the fiscal year ending September 30th, 1869:

The canals embraced in this division are as follows:

Erie canal, from east line of Wayne county to Buffalo, including works connected therewith	149	miles.
Genesee Valley canal, from Rochester to Olean	107	"
Extension of said canal, from Olean to Millgrove	6	"
Dansville branch, from Shakers' to Dansville	11	"
Totals	273	"

There are also seventeen miles of feeders, three of which are navigable, and three reservoirs.

ENGINEER DEPARTMENT.

The engineer department on this division was under the single charge of Daniel Richmond, Division Engineer, until the first of July last, when J. Nelson Tubbs was appointed Resident Engineer, and assigned to this division, since which time it has been under the joint charge of the division and resident engineers, and their assistants employed in said department. The duties of this department are measurably twofold: one part is to look after the repairs, navigation and management of the canals; another to make the surveys, maps, plans and estimates for all work authorized by the Legislature or Canal Board, and supervise the construction of same. There is now a large amount of this kind of work under contract and in progress on this division, necessarily requiring quite a large engineering force to supervise its construction.

The appropriations made of late years from the ordinary repair fund to pay this branch of the service have been inadequate for that purpose, and the balance has been taken from the fund raised by tax under special laws authorizing the construction of certain works and improvements on the canals, classed as extraordinary repairs. In order to equalize these charges as between the two funds, a larger amount should be appropriated from the ordinary repair fund to the payment of said department, and sufficient to cover the expense of all the service demanded of the same, connected with the repairs of the canals.

SUPPLY OF WATER.

This division of the Erie canal is supplied with water from Lake Erie through Black Rock harbor, from Tonawanda creek at Pendleton, from Tonawanda and Oak Orchard creek at Medina, from the Genesee Valley canal and Genesee river feeder at Rochester.

The main supply, is however, obtained from Lake Erie. The Clyde or Montezuma level has heretofore been mostly supplied from the west; but now that the reservoirs on the west end of the Middle Division are completed, it is anticipated said level can be better supplied from the Port Byron level, directly adjoining it, on the east, and thus save the passage of the water required for said level through so long a line of canal as now.

The supply of water for the Genesee Valley canal is obtained from the same sources as mentioned in my last annual report, except that a feeder from Oil creek has been introduced at the foot of lock No. 101 (which supplies that portion of the canal south of said lock to Olean), in addition thereto.

In my last annual report it was contemplated constructing a reservoir on the Ischua creek, covering some 200 acres. The citizens of that locality were opposed to the construction of so large a reservoir, claiming that it would destroy their farms, as it would take all their flat lands in the valley, leaving them but the hills which were of little value alone. The engineers, upon inquiry and further examination of the matter, concluded that a reservoir of some fifty acres could be made on the Ischua creek by raising the State dam across said creek six and a half feet, without occasioning much damage for lands taken, and increase the capacity of Oil creek reservoir by raising it one to two feet more than first contemplated, which would make the capacity of the two reservoirs about the same as at first proposed, and that the work of both, so done, would cost less in construction, and far less for damages; besides the additional capacity given to Oil creek reservoir would enable that much water to be furnished to the canal at a point eight miles nearer to where it will be required than if obtained from the Ischua. These changes were approved by the Canal Board, and said works have been and are being constructed in accordance therewith.

NAVIGATION AND REPAIRS.

This division is divided into eight subdivisions or repair sections, five of which are upon the Erie and three upon the Genesee Valley canal. Those upon the Erie are Nos. 10, 11, 12, 13, and 14, and those upon the Valley Nos. 1, 2 and 3.

The Canal Board, on the 10th day of March last, appointed the following named persons as Superintendents on this division, to take effect on the 1st of April following, and assigned to them the sections as follows:

William T. Ashley, section No. 10, Erie canal.
Matthew Rigney, section No. 11, Erie canal.
Charles A. Danolds, section No. 12 and 13, Erie canal.
Frank B. Gallagher, section No. 14, Erie canal.
John H. Jones, section No. 1, Genesee Valley canal.
Horace Hunt, section No. 2, Genesee Valley canal.
Wm. A. Kirkpatrick, section No. 3, Genesee Valley canal.

The above named Superintendents are now in charge of the respective sections then assigned them.

The canals on this division were opened for navigation at the time appointed, except section No. 2 on the Genesee Valley, which, in consequence of the backwardness of the work on certain locks that were being rebuilt, was not got in readiness until the 6th of June following.

Navigation upon this division of the Erie canal has been good and mainly uninterrupted during the entire season, but upon the Valley canal it has been otherwise, especially so upon section No. 2, where it has been seriously interrupted by breaks caused by floods, and the difficulties attending the maintenance of the canal on the slide banks at Portage, the details of which are more particularly stated in subsequent parts of this report.

REPAIRS OF ERIE CANAL.

SECTION No. 10.

WILLIAM F. ASHLEY, *Superintendent.*

This section is thirty-five miles in length, and extends from the east to the west line of Wayne county. It is under contract with Benjamin Butler, to be kept in repair at the annual compensation of $34,000.

The mechanical structures on this section are as follows: One double lift lock, eight single lift locks, eleven iron truss road bridges, twenty-three wooden road and nine wooden farm bridges, three waste-weirs, three composite and nineteen stone culverts, three discharge culverts, two wooden trunk aqueducts, four lock and nine watch houses, and one work shop and shed.

One of the wooden road bridges, being the most easterly bridge in the village of Palmyra, is to be removed and discontinued, by consent of the corporate authorities of said village, upon the State building an additional roadway to the next iron truss bridge above, which is now in process of execution; one other of said wooden bridges at Market street, in said village, is now being replaced by an iron truss bridge with iron needle beams.

One other of said wood bridges requires some repairs and three rebuilding; the balance, twenty-six in number, are in good condition; four of them were built new the past season.

The iron truss bridges at Clyde, Lyons and Newark, seven in number, are having iron needle beams inserted and new joists and plank put in. The remaining four iron bridges require but slight repairs.

The locks were quite thoroughly repaired last spring and have worked well during the past season, causing no trouble except from the occasional breaking of a paddle gate.

With general repairs to the lock gates, mitre sills and paddles, and one set of new gates to the middle Lockville lock and the inserting of three or four new toe posts to other locks will put all the locks on this section in good working order.

One of the discharge culverts is in good condition; the other two need considerable repairs and perhaps rebuilding.

New floor timbers and new bottom and side plank were put into the Palmyra aqueduct last spring.

Two of the wast-weirs require to be repaired, and one on the lock Berlin level to be rebuilt. A break occurred at the latter one on the 24th of September last, which occasioned some delay to navigation at that point, but not of a serious nature.

New coping timbers have been placed on the tow-path vertical walls at Palmyra and Clyde.

Portions of the towing-path have been raised and graveled; and the slide banks, on the Palmyra level, further protected where they gave indications of failure.

Considerable cleaning out of the canal on the Perinton level, at Macedon, at Palmyra, at Lyons, at Clyde, and on the level below Clyde, will be necessary previous to the opening next spring. With the exception of the break at lock Berlin waste-weir, a good navigation has been had on this section, and without interruption, during the past year.

The cost of repairs for the fiscal year, ending September 30, 1869, has been $34,000.

SECTION NO. 11.

MATTHEW RIGNEY, *Superintendent.*

This section is forty miles in length, and extends from the east line of Monroe county to west end of construction section No. 284, in the village of Brockport. It is under contract with Valentine F. Whitmore to be kept in repair, at the annual compensation of $43,500.

The following mechanical structures are upon this section: Five lift locks, one guard lock (not in use), one weigh lock, three stop gates, one aqueduct, eight waste-weirs, forty-one culverts, one wood farm bridge, one wood foot bridge, thirty wood road bridges, three wood tow-path bridges, one iron tow-path bridge, twenty-five iron road bridges, one iron swing bridge, three lock houses, five watch houses and one dam; a wood road bridge, at four-mile grocery; one east of six-mile grocery, and one at Drakes, in Brighton, have been rebuilt and others replanked. All the wood bridges, on this section, have been rebuilt, within the last six years, and are in good order.

The following named iron bridges have been retimbered: Caledonia avenue and Brown street, in the city of Rochester, and two in the village of Brockport. All the iron bridges, on this section, have been retimbered throughout within four years, and are also in good order. A new bridge of iron, in place of wood, has been constructed on

Pittsford road, and a road iron swing bridge, on Exchange street, in the city of Rochester.

Considerable work has been done in securing and stopping leaks through the masonry of the waste-weir at Adam's Basin. Cut-off walls were built and masonry grouted last spring, and no trouble has been experienced at that point during the season of navigation, but it is evident that a considerable portion of the masonry will have to be taken down and rebuilt very soon, and it probably should be done before opening of navigation next spring; at any rate the gate frames should be new previous to that date.

The small waste-weir, on three mile level in Brighton, gave signs of giving out under and around foundation, and was banked up with earth. This should be rebuilt, and the foundation of same lowered about two feet to more effectually drain the level to bottom when required.

The mitre sill wall of Miller's lock gave out under the mitre sill and was temporarily faced with plank. It will have to be rebuilt in part, before opening of navigation. There should be a new upper mitre sill placed in each lock. Some repairs should be made to lock gates and valves, but they are generally in good working order.

The interests of navigation would be subserved by increasing the number of snubbing posts at various places along the towing-path.

The piers of the stop gates at Cartersville and Bushnell's Basin must be rebuilt next spring to keep them in effective working condition. The one near House of Refuge was extensively repaired last spring.

Considerable work has been done in raising and graveling tow-path and cutting back ditches from eight mile grocery to Spencerport; between Rochester and Brighton; between Bushnell's Basin and Wapping, and from Fairport east, and the work will be continued at other points next season. Considerable new coping timber on vertical walls, at Brockport and Adams' Basin will be required next season.

The work of raising the banks, west of the Genesee river aqueduct through the city of Rochester, authorized by act, chap. 899, Laws of 1866, and embraced in the repair contract has been completed.

During the latter part of this season the west end of the high embankment, west of the four mile grocery, began to slide off, on rear of bank. It was temporarily checked; but previous to letting in the water next spring the prism should be thrown farther to the south by cutting into the hill on the berm and constructing a new towing-path inside of the present one, as has been successfully done at other points on the same embankment.

The embankment, at foot of reservoir level, in Brighton, should be raised with gravel, and secured by carrying up the vertical wall on face of same to top bank.

There are some leaks through seams in the rock, in bottom of three-mile level, in Brighton, which, although they do not particularly endanger the canal, do discharge a large amount of water during the season, to the detriment of navigation and injury to adjacent lands. These should be cut off next spring, by excavating the rock to a greater depth and carrying a course of concrete or puddle over the places where such leaks occur.

Considerable material and rock boulders were excavated and removed from the prism of canal, between St. Paul street and first lock in Brighton, which has resulted in materially improving navigation, during the season, at that point.

Previous to opening of navigation last spring, bars and other obstructions were quite generally removed from the prism, and navigation has been almost uninterrupted during the season. A detention of a few hours occurred by a small break in bank of Genesee river feeder, and one also of a few hours duration, in consequence of the giving way of the old arch over the mill race, at entrance of the old Rochester aqueduct, but no detentions have occurred in consequence of low water or the grounding of boats.

The cost of repairs on this section for the fiscal year, ending September 30, 1869, has been $43,500.

SECTION No. 12.

CHARLES A. DANOLDS, *Superintendent.*

This section extends from the west end of construction section No. 284 (in Brockport) to the west line of Orleans county, and is thirty miles in length.

It was under contract with William McRae at the annual compensation of $8,952, until canceled by the Contracting Board pursuant to act, chap. 252, Laws of 1864, which cancelment took effect September 15, 1869; since which time it has been under contract with P. H. Linneen, at the rate of $15,000 per year.

The mechanical structures on this section are as follows: Eleven iron road, twenty wooden road, and three wooden farm bridges; seven waste-weirs; forty-three culverts; one aqueduct; three stop-gates; two bulkheads, and one dam.

By means of a dam across the Tonawanda creek, at a point some nine miles south of Medina, and a feeder thence to Oak Orchard creek, the waters of said streams are brought by the channel of the latter to Medina, and thence by a short feeder conducted into the canal at the latter place, which is some eighteen miles east of Lockport. This feeder is designated as the Tonawanda and Oak Orchard creek feeder.

During spring repairs, about 800 feet in length of vertical walls at Medina, Eagle Harbor and Albion were taken up and relaid, and the slope walls, in many places along the section, repaired. All loose stone found in the channel were removed outside of the banks, and bottoming done, where required, to give the requisite depth of water. No detentions have occurred on this section, and navigation has been good the entire season. The waste-weirs were repaired previous to the opening of navigation, and stand well.

One stop gate requires rebuilding, and the others some considerable repairs to put them in good order for use.

Some 2,500 lineal feet of coping timbers have been placed on the vertical walls at Medina, and other places on the section. Six miles of the towing-path west of Albion have been raised and regraded, with ditches in rear where required, so as to throw the falling water off the back side of the bank.

Four new bridges have been constructed, to wit: Coon's, Townline, and Jacquith's, and one over the feeder at the Batavia road crossing. Three iron and five wooden bridges have been replanked, and the others more or less repaired.

The banks of the feeder, north of the Batavia road, had become low, and, in high water, overflowed. They have been raised in this distance to such extent as is anticipated will prevent such overflow hereafter, unless the town authorities, who have, without consent, laid a road along this bank, wear it down by use, and neglect proper repairs to same in consideration of such use. Some bottoming-out will be required at several places, the slope walls repaired, about 1,000 feet in length of vertical walls relaid, the loose stone removed from the prism, and a culvert near Albion taken up and rebuilt before the opening of navigation next spring.

Eight or ten new bridges must be built next season, and several miles more of the towing-path raised and regraded in manner corresponding to that done during the past season. The bulkheads at Medina and at the head of Oak Orchard creek feeder require extensive repairs, if not renewal.

The dam across Tonawanda creek, at the head of said feeder, requires some protection of brush and stone and some repairs to the abutments.

The cost of repairs on this section for fiscal year ending September 30, 1869, has been as follows:

Paid by drafts on repair contract	$9,586 10
" " " for material purchased	7,416 00
	$17,002 10

Section No. 13.

Charles A. Danolds *Superintendent.*

This section is twenty-five miles in length, and extends from the east line of Niagara county to Pickard's bridge over the Tonawanda creek.

It is under contract with Frederick M. Mills, at the annual compensation of $19,400.

The mechanical structures on this section are as follows: Five pair of double combined lift locks; one State race and two bulkheads; twenty-one culverts; four waste-weirs; seventeen road, thirteen iron road, two wooden farm, one iron tow-path change, and four wooden tow-path bridges; one stop-gate; one lock and toll house, and one workshop and timber shed.

During spring repairs the canal was cleaned out from foot of locks to Cady's dry dock, through Lower Lockport and at places where required between that and Middleport, also on the mountain ridge between head of locks and Sulphur Spring guard lock. Through the rock cutting in this distance, more or less stone are deposited in the canal, in part caused by the falling in of stone from the walls on the high banks above, and in part from carelessness of parties loading stone there, large quantities of which are annually boated to Buffalo.

About 1,000 feet in length of vertical wall at Middleport and other places on the section were taken up and relaid, and the locks quite generally repaired previous to the opening of navigation. During the season the wood work of the iron bridge at Middleport and the iron bridge at Pine street, Lockport, have been renewed, and one span of the guard lock bridge rebuilt on new bents. About two miles of the berme bank east of the sand cut near Millard's has been strengthened and faced with stone to prevent wash of same. Several miles of the towing-path have been raised and regraded and in part graveled, and some 5,000 lineal feet of new docking put in.

A considerable amount of the same kind of work will require to be done another season. Five wooden bridges should be rebuilt, the approaches to four iron bridges and the wood work of three others renewed. Six to eight new lock gates already framed should be inserted and as many more procured and framed ready for use in case of need. Seven large and six small culvert gates should be inserted, the mitre sills at the foot of the locks, which are of wood, replaced with new ones and the bottom lining of several of the locks renewed, which, together with general repairs to other portions, will place them in good working order. The bulkheads at entrance to State and hydraulic races should be rebuilt. The pier on berme side at head of locks is so short that boats are frequently thrown on to upper end of same, and held there by the strong current entering the race until relieved by shutting the race gates. This danger and inconvenience to boats entering the locks can be remedied by extending said pier fifty or sixty feet farther up the canal, which it is deemed proper and advisable to do.

The walls of the Sulphur Spring guard lock are too low to hold back the extreme high floods of Tonawanda creek. The lower walls and gates are also too low to enable locking to be done there, on occasions of so high water as occured twice during the past season, on the 8th of September and 1st of December, causing considerable delays to navigation in consequence.

It is recommended that the walls and gates of said lock be raised so as to remedy such difficulty in the future.

Navigation upon this section has, in general, been good and uninterrupted, except from the causes before stated.

The cost of repairs for the fiscal year ending September 30, 1869, has been $19,400.

SECTION No. 14.

FRANK B. GALLAGHER, *Superintendent.*

This section is nineteen miles long and extends from Pickard's bridge over the Tonawanda creek to the city of Buffalo, including the main and Hamburgh street and Clark and Skinner canals and the

the canal basins and slips in said city. It is under contract with George D. Lord at the annual compensation of $44,400.

The mechanical structures on this section are as follows: Twenty-three iron road, two iron swing, three iron change, six wooden road and farm, three wooden tow-path and two wooden tow-path draw bridge; three culverts; two waste-weirs; one river lock; one guard lock and bulkhead and one ship lock; one dam; two spillways, Erie basin break water; Black Rock pier and two jetty piers; one located at foot of Erie basin and the other at the entrance to Black Rock harbor.

The State ditch culvert at Tonawanda, which failed in the spring of 1868 and was closed by dams constructed around ends of same during that year, was taken up and rebuilt last winter. This structure is some thirty-six feet in width and has six openings for the passage of water. Its foundation is about twelve feet below the surface of the Niagara river and was found very difficult of drainage, requiring the construction of heavy coffer dams on each side, which, in consequence of unforseen obstructions in the channel, made it very expensive to get them sufficiently tight to enable a twelve inch steam pump run day and night to dispose of the water so that the work of rebuilding could proceed. The weather, also, for considerable portion of the time, was unfavorable; but by repeated, constant and untiring efforts the work of rebuilding was finally accomplished, and the culvert is now in good condition. The slope walls, which had slid into the prism on construction sections 364, 365 and 366, were taken up and relaid. The vertical wall below guard lock at Black Rock, which had been but recently built, also slid into the canal and was dredged out and rebuilt further back on a good pile foundation.

Two new farm bridges have been built, one on section 362 and the other on section 363; also one span of York street change bridge with boiler iron plate chord. Twenty-three farm and road bridges, across the State ditches at Tonawanda, were rebuilt the past season and 100 feet in length of substantial rubble wall masonry laid on the inner face of the State ditch on the north side of Tonawanda creek, adjoining the Backer hotel, to prevent the same from being undermined by the flood waters passing through said ditch. The towing-path on the creek has had considerable repairs as also on other portions of the section, but the peculiar situation of each end of said section renders almost constant repairs necessary to keep them up. That portion on the creek is subject to be washed and worn away by its floods, and that portion in Buffalo and along Black Rock harbor to be undermined and washed away by the winds and waves of the lake. Many of the foundations of walls and structures along the latter are not deep enough to insure stability, and hence the difficulty of maintaining them; stable foundations can be secured only at great expense for coffer dams and bailing. The abutments of Ohio street bridge over the Clark and Skinner canal gave such indications of failure that they were taken up and relaid on a new pile foundation a little lower than that upon which they were originally constructed but not sufficiently deep to insure the desired permanency, although they seem as yet to stand well.

The canal and its slips and basins divide the lower part of the city of Buffalo into six distinct and separate portions connected by bridges only. Here are located the principal freight depots, warehouses and manufactories, rendering it necessary to maintain a large number of bridges to accommodate these interests, and which, owing to their extensive use for heavy teaming, require constant care and attention to keep them in proper repair. Several of these bridges should have iron needle beams inserted to give them greater strength and security. New tow-path bridges should be constructed over slips Nos. 1 and 3, and one farm bridge each on sections 364 and 365.

The dredge has been in constant use during the past season at points where most required. A large amount of dredging should be done between Niagara depot and Black Rock harbor, and some at places between that and Ferry street. Deposits are constantly accumulating from the wash and drainage of the city, and from the freshets in Buffalo creek, requiring a large amount to be removed annually to keep the channels open.

Black Rock pier requires considerable repairs at places between Squaw Island and the Queen City mills, and between the Grand Trunk railroad and Bird Island; this latter it may be necessary to raise to make it conform to the increased height that will be given to the water there by the extension of the pier above said island, which has in part been constructed.

The walls on guard lock section were orignally built of too small stone and many of them of inferior quality. They should be rebuilt of a larger and better class of stone.

The walls along the narrow canal above Ferry street were built of large stone taken from the adjoining excavation and made at the time a good looking wall, but a portion of the stone are too soft and have since slackened by exposure and should be replaced with other suitable stone in order that the towing-path may be properly maintained; more or less new coping timbers are required on this wall and on the walls along the broad canal above, up as far as Erie street.

The canal between Commercial and Erie streets, a distance of 1,000 feet, is faced with a timber docking which is much crowded in and out of line, thereby contracting the channel.

It is found very difficult to hold the banks in place with timber facing only. It is recommended that a portion of the banks be cut back so as to give a width to the canal of eighty feet in this distance, and support the same with a heavy vertical or battered wall built up from the bottom.

The cost of repairs of this section during the fiscal year, has been as follows:

Paid by drafts on repair contract	$44,400 00
Paid by drafts for repairing breaks, rebuilding State ditch culvert, damages for lands overflowed, &c.	32,078 68
Paid by drafts for inserting iron needle beams in Ohio street bridge Buffalo	750 00
Paid by drafts for deepening State ditches at Tonawanda	4,126 20
	$81,354 88

REPAIRS OF GENESEE VALLEY CANAL.

SECTION No. 1.

JOHN H. JONES, *Superintendent.*

This section is fifty-two miles long, extending from the junction with the Erie canal at Rochester, to the terminus of the side cut at Dansville, Woodville and Scottsville.

The section is under contract with Charles E. Candee, until January 1st, 1873, at the annual compensation of $19,900.

The mechanical structures are as follows: Nineteen lift locks; two guard locks; four dams; three bulkheads; eight aqueducts; seven waste-weirs; fifty-four culverts; fifty-six wood farm bridges; one wood farm and change bridge; thirty-five wood road bridges; two wood road and change bridges; six iron road bridges; two wood tow-path bridges, and eleven lock houses.

A large amount of bottoming was done on the Dansville side cut before the opening last spring, also on the Piffardinia level, amounting in the aggregate to nearly eight miles.

No boats have been aground this season in consequence of high bottom; about two miles of bottoming will be required to be done next spring in addition to the removal of the usual bars.

The State dredge was used in excavating the deposit in the river channel at Mt. Morris, and no difficulty has been experienced there. The State, under a contract with John Dunn, has the past summer opened a new and independent channel from the river to the bulkhead of the Murray Mill canal for supplying the mills at Mt. Morris with water, which heretofore drew their supply through that portion of the State canal lying between the river lock and river. It is believed this will in the future prevent the accumulation of the large deposit of sediment that has occurred every spring heretofore, at this point.

Most of the locks and lock gates have received some repairs. Some new gates and quite a number of new valves will be required before the opening of navigation next spring, and the composite locks at Dansville will require extensive repairs to the lining. The timber work to the spillway, around lock No. 6 on the Dansville side cut, has been renewed; some of the others will require renewing next spring. A new lock house has been built at lock No. 7, on the main canal. Three new wood farm bridges have been built on the Dansville side cut, and one other reconstructed with the sound materials taken from those built new. Nearly all the other wood bridges on the section have received more or less repairs, and are in passable condition.

One wood farm bridge (Burk's, at Mount Morris) is now down, but being located but a few rods from the new iron bridge now being constructed there, it is thought that it may be commuted for.

The Hunter street bridge, Rochester, has been replaced with an iron bridge, under a special act. The Bradnor and Hartman creek aqueducts have received some repairs. The Buck run and Baird's creek will require considerable repairs before the opening of navigation next spring.

Some brush and stone protection has been placed in rear of the protection piles at the Shaker aqueduct for the security of the same. The Piffardinia waste-weir has been in disuse the past season, and requires rebuilding.

The timber work of the waste-weir near Titus' landing, on the Dansville side cut, requires renewing.

Navigation opened on this section on the 6th of May.

A breach occurred on the Piffardinia level, on the 29th of August, causing a detention of ten days. This breach was caused by the failure of a culvert.

Another small breach occurred near Canawaugus, in July, but caused no detention.

The cost of repairs on this section during the past fiscal year has been as follows:

Paid by draft to repair contractor....................	$19,700 00
Paid by draft for building an iron bridge on Hunter street, Rochester, per act, chap. 648, Laws 1867...........	4,613 81
	$24,313 81

SECTION No. 2.

HORACE HUNT, *Superintendent.*

This section is thirty-six miles in length, extending from the junction at the Shaker settlement to the south bank of the Genesee river feeder at Oramel, including said feeder and the Wiscoy feeder at Mixville.

This section was, at the commencement of the fiscal year, under contract with Samuel Price for the term of three and one-fourth years from the first day of October, 1865, for the sum of $17,000 per annum, which contract expired on the 31st day of December, 1868. On the first day of March, 1869, the section was again put under contract with Henry G. Ames, for the term of four years and ten months, for the sum of $27,749 per annum. The work of repairs was prosecuted under this contract from the 1st day of March up to and including the 31st day of July, 1869, at which time the contract was canceled pursuant to act chapter 252, Laws of 1864. From the 1st day of January, 1869, to the 28th day of February, inclusive, and from the 1st day of August to the close of the fiscal year, the repairs were made by the superintendents.

By the terms of cancellation, the contractor was released from the work of rebuilding the towing-path at the Portage slide, from and including the 12th day of July, 1869, and the work was done by the superintendent after that date.

Upon the surrender of the contract, the materials, boat, and tools, then upon the section, were purchased by the State; said purchase amounting to the sum of $2,512.65.

The mechanical structures upon this section are as follows: Sixty-one lift locks; one guard lock; seven aqueducts; eight waste-weirs; one dam and bulkhead; twenty-six culverts; thirty-three wood farm bridges; thirty wood road bridges; one iron road bridge; one wood foot bridge; twelve lock houses, and eight watch houses.

No work of importance was done after the 1st day of October, 1868, under the contract of Samuel Price, other than that necessary to maintain navigation.

Under the contract with Henry G. Ames, the bars at foot of the several locks were removed, and bottoming out was done on the several levels from locks Nos. 20 to 41, on nine mile level, on Mixville and Fillmore levels, and on levels from locks Nos. 68 to 71, a total distance of about four and seven-eighths miles. Thirty-one new lock gates were built and put in; one new wood farm bridge built, one road bridge (lower Brushville) thoroughly repaired, the masonry at the head of the several composite locks, from Nos. 12 to 49, inclusive, was calked and painted; new orifices for valves were inserted; all old ones were repaired where required; the lining to composite locks Nos. 55 and 71 was thoroughly repaired.

Three of the hollow quoins to stone lock No. 50 having been destroyed by the action of the frost, the stone work was cut out and wood quoins inserted. New waste gates were put in the waste-weir below lock No. 30; a new side was put in the middle span berme side of Cashuqua aqueduct and new foot bridge on same; the berme side of Portage aqueduct received a new plate, for about one-half the length of the structure, some new posts, new needle beams for foot bridge inserted and foot bridge replanked; the braces under trunk stringers in north span were cut off and trunk lowered to its place.

Two breaches occurred on this section before the opening of navigation; one at the head of lock No. 29, the other at the south end of Caneadea aqueduct, and one after the opening at Portage slide, while under contract, the repairs of which were made by the contractor. Four other breaches have occurred on the section during the season, three of which, viz., at Caneadea and Cold creeks aqueducts and Wiscoy feeder dam, caused by a sudden and very heavy fall of rain, which caused a rapid and extensive rise in the waters of the several streams upon which the structures named are located.

At Caneadea aqueduct the south abutment and adjoining pier were undermined and settled from three to four feet, a portion of the embankment in rear of the abutment and wing was carried away. Temporary repairs were made at this point; additional and longer piles were driven for the pier. Piles were also driven upon each side of the abutment upon which to rest the trunk stringers; this required the lengthening of the trunk about eight feet.

At Cold creek aqueduct the north abutment was undermined and fell into the stream, carrying with it the north span of the trunk. Quite a large amount of the embankment from the rear of the abutment was washed away by the water from the canal.

In making the repairs an additional span was made resting upon a pile pier immediately in rear of the old abutment, and a pile abutment twenty-four feet from the pier. I am of the opinion that the portion of the old abutment and wings still standing should be removed and the water way for the stream permanently increased by about the length of this additional span. At the Wiscoy feeder dam repairs were in progress at the time the flood occurred. Previous floods had undermined the north abutment and a portion of the body of the dam. The abutment was badly cracked and in danger of toppling over, which together with a portion of the body of the dam had been taken up preparatory to making the necessary repairs. The flood came and swept away the remaining portion of the body of the dam and about forty feet of the embankment, between the north abutment and the high ground. The abutment has been rebuilt upon a pile foundation, and the dam proper, with timber and plank resting on piles and secured with loose stone, gravel and brush, in the most substantial manner.

The fourth breach mentioned as having occurred after the opening of navigation, was on the short level just above lock, No. 61. It was a small one, and, occurring as it did, at the time the repairs of the one at the portage slide were being made, caused no detention.

Navigation opened on this section on the 6th of June, having been delayed in consequence of trouble at the slide, and the incomplete condition of the several locks that were under contract to be partly rebuilt.

The breach at the slide occurred on the 27th of June, and navigation was delayed thereby, with the exception of three or four days, until the 10th of August. The breaches at Caneadea and Cold Creek aqueduct, and Wiscoy feeder dam occurred September 8th, and navigation was suspended until the 4th of October.

The slide at Portage has proved more formidable, and caused more trouble for the past season than was generally anticipated. Previous to last spring no perceptible movement of that portion of the hill, between the canal and river precipice, had occurred; but as soon as the frost commenced to come out of the ground in the spring, the whole area below the canal, opposite the great slide above the canal, began to move toward and over the precipice, taking with it a portion of the towing-path and canal prism, and seriously endangering some 300 feet more of the bank. It has been with great difficulty, and at large expense, that navigation has been maintained at all during the season.

A large outlay will be required at this point the coming winter and spring to obtain navigation in 1870, and to insure that object the work should progress without interruption during the winter.

The work of removing the large mass of earth constantly pressing into the canal from the berme, has, under the contract with E. B. Van Dusen, progressed with barely sufficient rapidity (although a large force has been constantly employed) to maintain the requisite width for the passage of boats.

For the removal of the material below surface of water in the canal the State dredge has been used, and necessarily for the want of depositing ground, at considerable expense, it being necessary to deposit the material taken out with the dredge upon the top of the towing-path, from whence it was put upon boats, taken away and thrown over the precipice into the river, requiring a great deal of night work, as the material could not, with safety, be left upon the bank during the night, the additional weight causing the bank to settle rapidly.

The following statement exhibits the expenditures by the Superintendent during the fiscal year, on new structures:

Lock gates (1 for lock No. 59)	$64 62
Wood farm bridges (1 Thayer's, lower)	234 99
Wood road bridges (1 Ingersoll)	332 42
Watch-houses at locks Nos. 24, 28, 34, 44, 46, 51 and 55	198 71
Dams (Wiscoy feeder) rebuilt in consequence of being washed away by flood	1,530 13
Total	$2,360 87

The following are the expenditures by the Superintendent for ordinary repairs during the fiscal year:

Repairing locks	$12 74
Lock tending	2,964 00
Repairing lock gates	653 83
" aqueducts	432 52
" waste-weirs	12 00
" wood farm bridges	57 57
" wood road bridges	2,378 37
" wood tow-path bridges	6 00
" state scows	381 95

Repairing State dredge	$66 74
" lock houses	25 38
" watch houses	18 00
" piling machines	48 08
Raising and repairing banks	930 62
Clearing out canal	142 31
Clearing out creek channels	301 37
Repairing dams	79 25
Repairing breaches	11,365 75
Watching canal	483 00
Wheel barrows	55 25
Tools	94 38
Miscellaneous, including clerk hire	524 73
Deepening and widening channel at slide, &c	3,788 73
Repairing docking	53 50
Repairing stop gates	9 25
Superintendent's salary	1,000 00
Total	$25,885 32

The following work is necessary to be done previous to the opening of navigation in 1870.

At least sixty new lock gates will be required. The lining, to at least sixteen composite locks, will require extensive repairs.

The towing-path bridge of Portage aqueduct must be renewed.

The Wiscoy aqueduct needs some repairs.

Three wood road and two farm bridges to be new.

Three spans of the river bridge at Fillmore, to be rebuilt.

A large amount of bottoming out on the levels between Brushville and Nunda, at the deep cut and rock section on the nine mile level, and on the level between locks Nos. 68 and 69, and in the feeder at Oramel must be done, and the work before mentioned at the slide.

The cost of ordinary repairs on this section for the past fiscal year has been as follows:

Cutting out ice at Caneada aqueduct, repairing river bridge at Fillmore and lattice bridge	$403 57
Rebuilding in part, composite locks Nos. 12 and 16 and wood locks Nos. 18 and 19, under contract with Chas. Nichols	9,231 00
Rebuilding in part, composite locks Nos. 29, 32 and 36 and wood locks Nos. 30 and 37, under contract with C. & A. G. Rose	11,339 00
Rebuilding in part, composite lock No. 49 and wood locks Nos. 39 and 40, under contract with C. & A. G. Rose	11,305 00
Rebuilding in part, composite lock No. 65 and wood guard lock at Oramel, under contract with Jas. T. Severance	9,333 00

On Samuel Price's contract for repairs 1868	$6,800 00
On Henry G. Ames' contract for repairs 1869	11,562 08
Paid for boats, tools and materials	2,512 65
Paid for repairing break of March 28th, 1869, on mile level below Nunda, beyond liability of repair contracts.	747 95
Expended by Superintendent	28,246 19
	$91,480 44

SECTION No. 3.

WILLIAM A. KIRKPATRICK, *Superintendent.*

This section is thirty-seven miles in length and extends from the south bank of the Genesee river feeder at Oramel at its junction with the canal, to the Allegany river at Millgrove pond. It is under contract for repairs with Fayette Bristol until January 1st, 1874, at the annual compensation of $17,000.

The mechanical structures upon it are as follows: Thirty-four lift and two guard locks; four aqueducts; fifteen waste-weirs; twenty-three culverts; thirty-five road bridges; fourteen farm, one tow-path, two road and change, and one foot bridges (all of wood); two iron road bridges; four dams and two reservoirs.

During the season thirty-six new lock gates have been inserted and extensive repairs made to most of the others and many of the mitre sills and lock valves overhauled and repaired. At least thirty-five new gates must be inserted next spring. Quite a number of the composite locks have been repaired by renewing the plank facing and caulking the walls at head and foot with oakum, and a large amount of work of like character will be required next season.

The waste-weirs were extensively repaired by inserting new gates and frames and putting in brush, tree, and stone protection at ends of foundations. Three new wood bridges have been constructed, and two of iron in place of wood in the village of Cuba. The remaining road bridges have been pretty thoroughly repaired, but the work of reconstruction will have to be rapidly continued. The aqueducts at Olean will have to be thoroughly overhauled next spring and a large portion of the timber work renewed, and measures taken to give additional strength to these structures. The Ischua feeder aqueduct has been reconstructed with iron trusses, and timber trunk supported by solid stone abutments and piers, and is now considered a safe and durable structure.

The banks at various places have been raised; and in prosecuting this kind of work a considerable amount of embankment was put on tow-path banks at Smith's mills, to prevent the flood waters of Olean creek from overflowing the canal and thus causing breaks through embankments at other points. The towing-path bank north of Hinsdale and the banks of feeder from Oil creek, near lock No. 101, also require raising to keep out the flood waters of Oil creek. The banks of canal at several points will require protection from the wash of streams, during the coming season.

A large amount of material should be excavated from prism next spring; and it is expected that the State dredge can be used very effectively in taking out bars which may form, and removing material at points on the extension where it is difficult to drain off the water, and also at all other points where the necessities of navigation seem to require it.

A stone dam across Oil creek has been constructed, and a feeder from said dam to canal at foot of lock No. 101 excavated, which has proved very effective during the season, and has materially relieved the draft of water heretofore required from the summit level to supply the canal further south.

There has been an abundance of water for the canal during the season; in fact, the supply has been unprecedently large. Some damage has been done to the canal in consequence of the immense amount of water which has fallen, giving rise to floods of unusual magnitude.

The detentions to navigation on this section have been principally from difficulties arising at other points on the canal, although some of short duration have occurred in consequence of the floods above mentioned.

During the season the old well and discharge culvert of Oil creek reservoir gave out while the reservoir was nearly full of water, but immense masses of bank fell in and stopped the flow, thus preventing the sudden emptying of the reservoir and serious disaster to the canal and adjacent country. In order to put in the new well and discharge pipes, it became necessary to excavate an artificial channel at one end of the dam embankment to discharge the water as low as was practicable in that way, and to draw off the balance through timber bulkheads and shutes over the main embankment. This plan, conducted with much care, succeeded until there remained only from twenty-five to thirty feet depth of water in the reservoir at the dam, when the bank gave way and caused considerable damage (though but slight detention) to the canal by carrying deposit and debris into it and on to adjoining lands, by carrying off fences and small bridges, and depositing gravel and stone on the meadows. The old culvert and well were known to be unsafe, and a contract had been made for the building of new well, and insertion of discharge pipes, and the procurement of materials for same commenced previous to the failure of the old structure. The work is being vigorously prosecuted, and it is hoped that it will be so progressed that navigation will not be imperiled next season from lack of a supply of water from this source.

The Ischua dam has been raised six and one-half feet, so that a larger supply of water can be obtained from this source. The Ischua feeder is also to be improved during the winter so as to give additional facilities for passing water on to the summit level, and every effort will be made to put and maintain the section in navigable condition during the next season. The cost of repairs on this section for the past fiscal year has been as follows:

Paid by draft to repair contractor, N. S. Gere..........	$3,996 00
Paid by draft to same, difference of cost between an iron and wood bridge at Maple street, Cuba	2,805 14
Paid by draft to same; difference of cost between an iron and wood bridge at Canal street, Cuba	2,330 04
Paid A. Searl for work on locks	339 74
Paid by draft to repair contractor, Fayette Bristol.....	7,224 96
	$16,695 88

TABLE No. 1.

Works completed during fiscal year ending Sept. 30th, 1869.

The following works, authorized by the Legislature and Canal Board, have been completed during the fiscal year ending Sept. 30th, 1869, and the final accounts rendered for same.

ERIE CANAL.

CHARACTER OF WORK.	PAID BY DRAFTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
Ordinary Repairs.			
Repairing break of March 19, 1868, including rebuilding of State ditch culvert in 1869, at Tonawanda, hoisting out old lock gates, inserting new ones in Creek lock, land damages, &c.	$32,078 68	$15,059 09	$47,137 77
Repairing towing path on section No. 368	24,647 48	....	24,647 48
Total	$56,726 16	$15,059 09	$71,785 25
Extraordinary Repairs.			
Dredging below ship lock at Black Rock	$879 83	....	$879 83
Sidewalks for Chicago street bridge, Buffalo	6,400 00	....	6,400 00
Vertical wall at Middleport	4,053 20	....	4,053 20
Vertical wall at Medina	2,996 46	....	2,996 46
Swing bridge, Ferry street rock	1,379 92	$10,531 00	11,910 92
Draining pipe at Clyde	343 80	2,100 00	2,443 80
Draining pipe on construction section No. 214	508 14	2,120 00	2,628 14
Iron bridge near Medina aqueduct	2,792 02	....	2,792 02
West abutment and approach for change bridge section No. 367	1,283 39	....	1,283 39
Rebuilding towing-path on section No. 368	27,415 61	1,920 00	29,335 61
Inserting iron needle beams in Ohio street bridge, Buffalo	840 00	....	840 00
Total	$48,892 37	$16,671 00	$65,563 37

GENESEE VALLEY CANAL.

CHARACTER OF WORK.	Amount paid during fiscal year.	Amount previously paid.	TOTAL.
Ordinary Repairs.			
Rebuilding north trunk at Portage	$88 22	$15,140 00	$15,228 22
Earth bank and prism in place of south trunk at Portage	400 35	2,940 00	3,340 35
Total	$488 57	$18,080 00	$18,568 57
Extraordinary Repairs.			
Reopening and enlarging ditches near Beard's creek aqueduct	$521 00	$3,580 00	$4,101 00
Removing obstructions on three points on repair section No. 2	282 82	1,630 00	1,912 82
Reopening ditches in towns of Groveland and West Sparta	1,000 00	....	1,000 00
Rebuilding seven spans of Ischua feeder aqueduct	17,226 28	....	17,226 28
Total	$19,030 10	$5,210 00	$24,240 10

TABLE No. 2.

Works in progress at the close of fiscal year ending Sept. 30th, 1869.

The following named works, authorized by the Legislature and the Canal Board, were under contract and in progress at the close of the fiscal year ending September 30th, 1869.

ERIE CANAL.

CHARACTER OF WORK.	PAID BY DRAFTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
Extraordinary Repairs.			
Dredging Ohio basin at Buffalo	$5,508 00	$2,448 00	$7,956 00
Pile jetty pier at Black Rock	4,250 00	....	4,250 00
Extending Black Rock pier	2,635 00	....	2,635 00
Improving Main and Hamburgh street canal at Buffalo	7,157 00	799 00	7,956 00
Completing Clark and Skinner canal at Buffalo	10,200 00	2,550 00	12,750 00
Vertical wall at Port Gibson	1,156 00	....	1,156 00
Protecting docking, Ohio basin	1,997 50	....	1,997 50
Bridge abutment of Perry and Smith streets, at Brockport	1,717 00	....	1,717 00
Swing bridge, Exchange street, Rochester	6,987 00	....	6,987 00
Dredging channel at north end of Erie basin breakwater, Buffalo	595 00	....	595 00
Removing deposit from Black Rock harbor	1,232 50	....	1,232 50
Removing old warehouse foundation at Black Rock	1,020 00	....	1,020 00
Iron bridge at Brockport	....	....	....
Completing Main and Hamburgh street canal	....	....	....
Removing division wall at Black Rock harbor	....	....	....
Doubling fourteen locks	....	....	....
Removing bench walls between Lyons and Lockville	....	....	....
Receiver for White's creek, near Wayneport	....	....	....
Tow-path bridge near Macedon	....	....	....
Iron bridge on Pittsford road	....	....	....
Inserting iron needle beams in bridges at Clyde, Lyons and Newark	....	....	....
Inserting iron needle beams in bridge, Main street, Brockport	....	....	....
Iron bridge, Market street, Palmyra	....	....	....
Stop dam at junction of Genesee river feeder at Rochester	....	....	....
Additional sluice culvert, Pendleton	....	....	....
Vertical wall at Pendleton	....	....	....
Total	$44,455 00	$5,797 00	$50,252 00

TABLE No. 3.

Works in progress at the close of the fiscal year ending September 30th, 1869.

GENESEE VALLEY CANAL.

CHARACTER OF WORK.	PAID BY DRAFTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
Ordinary Repairs.			
Rebuilding locks Nos. 12, 16, 18 and 19	$9,231 00	....	$9,231 00
Rebuilding locks Nos. 29, 32, 36, 30 and 37	11,339 00	....	11,339 00
Rebuilding locks Nos. 49, 39 and 40	11,305 00	....	11,305 00
Rebuilding lock No. 65 and guard lock	9,333 00	....	9,333 00
Break on mile level, below Nunda, beyond the liability of the repair contractor	747 95	....	747 95
Total	$41,955 95	....	$41,955 95
Extraordinary Repairs.			
Deepening, widening and improving canal, from Junction to Rapids lock, Rochester	$11,492 00	....	$11,492 00
Dam, bulkhead and feeder, at Smith's Mills	4,199 00	....	4,199 00
Slide bank at Portage, repair section No. 2	25,228 00	$1,207 00	26,435 00
Raising Oil creek reservoir	52,870 00	1,700 00	54,570 00
Ischua reservoir	18,090 00	....	18,090 00
Ischua feeder	1,360 00	....	1,360 00
Protecting tow-path bank near lock 71, and bank of Genesee river feeder at Oramel	4,165 00	....	4,165 00
Overflow spillway below Nunda	1,105 00	....	1,105 00
Channel from Genesee river to bulkhead of Murray mill canal, Mt. Morris	282 00	....	282 00
Deepening summit level from lock No. 97	969 00	....	969 00
Iron bridge at Mt. Morris	306 00	....	306 00
Iron bridge over Griffin creek, at Cuba	1,207 00	....	1,207 00
Iron bridge over Canal street, at Cuba	2,330 04	....	2,330 04
Iron bridge over Maple street, at Cuba	2,805 14	....	2,805 14
Iron bridge over Hunter street, at Rochester	4,613 81	....	4,613 81
Vertical wall, between West avenue and Mud lock, at Rochester	1,200 00	....	1,200 00
Steam dredge	8,200 00	....	8,200 00
Deepening culvert near lock No. 2	....	....	....
Improving and securing outlet to Rockville reservoir	....	....	....
Total	$135,371 99	$2,907 00	$138,278 99

STATEMENT showing the expenditures upon this division for and during the fiscal year ending September 30th, 1869.

ORDINARY REPAIRS.

NAME OF WORK OR EXPENDITURE MADE.	PAYMENTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
General Management.			
Commissioner's salary and travel	$2,400 00	....	$2,400 00
Clerk hire, office rent and contingent expenses of Canal Commissioner's office at Rochester	1,981 54	....	1,981 54
Clerk hire of Board of Canal Commissioners and Contracting Board, at Albany, including travel and the incidental expenses of that office	527 92	....	527 92
Total	$4,909 46	....	$4,909 46

Statement.—(Continued.)

ORDINARY REPAIRS.

NAME OF WORK OR EXPENDITURE MADE.	PAYMENTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
Erie Canal.			
Repair section No. 10	$34,000 00	....	$34,000 00
Repair section No. 11	43,500 00	....	43,500 00
Repair section No. 12	17,002 10	....	17,002 10
Repair section No. 13	19,400 00	....	19,400 00
Repair section No. 14	81,354 88	$15,059 09	96,413 97
Repairing towing-path on construction section No. 368	24,647 48	....	24,647 48
Assisting weighmaster at Rochester, during crowd of boats	100 00	....	100 00
Towing canal boats around construction section No. 368, at Black Rock	760 50	....	760 50
Tending swing bridge on Exchange st., at Rochester	441 64	....	441 64
Miscellaneous expenditures for swing bridge, signs, oil, lamps, lever, &c.	29 04	....	29 04
Engineering and incidental expenses	4,082 54	....	4,082 54
Printing and publishing notices of lettings	628 25	....	628 25
Total	$225,946 43	$15,059 09	$241,005 51
Genesee Valley Canal.			
Repair section No. 1	$19,700 00	....	$19,700 00
Repair section No. 2	50,272 44	....	50,272 44
Repair section No. 3	11,560 70	....	11,560 70
On construction contracts, as per table No. 1	488 57	$18,080 00	18,568 57
On construction contracts, and on repairing break, as per table No. 3	41,955 95	... .	41,955 95
Extra dipper for steam dredge, including tools, fixtures and repairs	614 56	....	614 56
Service of man superintending steam dredge	356 00	....	356 00
Engineering and incidental expenses	12,049 21	... .	12,049 21
Printing and publishing notices of lettings	129 60	....	129 60
Total	$137,127 03	$18,080 00	$155,207 03
EXTRAORDINARY REPAIRS.			
Erie Canal.			
On construction contracts as per table No. 1	$48,892 37	$16,671 00	$65,563 37
On construction contracts as per table No. 2	44,455 00	5,797 00	50,252 00
Engineering and incidental expenses	5,947 65	....	5,947 65
Printing and publishing notices of lettings	826 06	....	826 06
Total	$100,121 08	$22,468 00	$122,589 08
Genesee Valley Canal.			
On construction contracts as per table No. 1	$19,030 10	$5,210 00	$24,240 10
On construction contracts as per table No. 3	135,371 99	2,907 00	138,278 99
Engineering and incidental expenses	5,057 91	....	5,057 91
Printing and publishing notices of lettings	458 86	....	458 86
Total	$159,918 86	$8,117 00	$168,035 86
Enlargement of Erie Canal.			
Drafts and certificates for awards made by Canal Board and Appraisers	$4,898 00	....	$4,898 00
Counsel fees for attorneys before Canal Board and Board of Canal Appraisers	10 00	....	10 00
Total	$4,908 00	....	$4,908 00
Construction Genesee Valley Canal.			
Drafts and certificates for awards made by Canal Board and Appraisers	$7,217 00	....	$7,217 00
Counsel fees for attorneys before Canal Board and Board of Canal Appraisers	302 85	....	302 85
Total	$7,519 85	....	$7,519 85

Statement.—(Continued).

EXTRAORDINARY REPAIRS.

NAME OF WORK OR EXPENDITURE MADE.	PAYMENTS.		TOTAL.
	Amount paid during fiscal year.	Amount previously paid.	
Repair Trust Fund.			
Drafts to contractors for deposits on account of repair contracts, and interest accumulated on same (act chap. 116 Laws of 1868)	$14,094 79	....	$14,094 79
Total	$14,094 79	....	$14,094 79
SUMMARY.			
General management	$4,909 46	....	$4,909 46
Ordinary repairs, Erie canal	225,946 43	$15,059 09	241,005 52
Extraordinary repairs, Erie canal	100,121 08	22,468 00	122,589 08
Enlargement, Erie Canal	4,908 00	....	4,908 00
Ordinary repairs, Genesee Valley canal	137,127 03	18,080 00	155,207 03
Extraordinary repairs, Genesee Valley canal	159,918 86	8,117 00	168,035 86
Construction, Genesee Valley canal	7,519 85	....	7,519 85
Repair Trust Fund	14,094 79	....	14,094 79
Total	$654,545 50	$63,724 09	$718,269 59

EXTRAORDINARY REPAIRS.

AUTHORIZED BY ACT, CHAP. 715, LAWS OF 1868, AND ACT, CHAP. 877, LAWS OF 1869.

Erie Canal.

The progress and present condition of the works authorized by said acts may be stated about as follows:

The Clark and Skinner canal including a bridge over same at Scott street; the deepening of the Ohio canal from Elk street to Ohio basin; and the driving of piles to secure the docking around said basin; the improving of about one-third of the Main and Hamburgh street canal; the construction of a jetty pier at the entrance to Black Rock harbor; the dredging of a channel below the ship lock and the construction of a new towing-path on section 368, have been completed.

The work of deepening Ohio basin to thirteen feet water is about three-fifths done. The removal of a portion of the division bank near the upper end of Black Rock harbor, and the old warehouse foundations opposite Bird avenue, in said harbor, are about two-thirds done.

The balance of the work necessary to complete the Main and Hamburgh street canal, and construct new bridges over Ohio canal at Fulton street, and over the Erie canal at Georgia street, and the work of extending, raising and strengthening the division bank between the canal and mill-race at Lower Black Rock are all under contract.

The construction of a channel around the north end of Erie basin breakwater is well advanced; 240 feet in length of the extension of Black Rock pier has been constructed, and 10,000 cubic yards of deposits removed from the broad part of Black Rock harbor, under the contract for removing same.

The construction of vertical walls at Pendleton, and a sluice culvert from back ditch to the canal, in said town, are in progress. The abutments for new bridge at Brockport have been completed and the approaches and superstructure will be finished next spring. The construction of a stop dam at mouth of Genesee river feeder, and deepening of the canal at Rochester have been commenced and will be vigorously prosecuted the coming winter.

A receiver at White's creek, an additional track, each, to the towing-path change bridge at Macedon, and the easterly iron bridge in the village of Palmyra, the removal of the wall benches and construction of slope walls between poor house lock and Lyons, and the doubling of the remaining single locks (fourteen in number) on this division, are all under contract and progressing very well; the vertical walls at Middleport and Medina have been completed, and those at Port Gibson will be finished before the opening next spring.

The law for building culvert and vertical wall in the village of Middleport, is so ambiguous and uncertain in its terms, that no action has been taken under same. It refers to the provisions contained in another law, which has no connection with this work and in which it is not even mentioned.

Act, chapter 866, Laws of 1869, directs the Canal Commissioners to construct a farm bridge over the Erie canal, on the farm of Arsino B. Warner, in the town of Greece, Monroe county, and limits the expenditure for same to $1,000.

Act, chapter 877, Laws of 1869, appropriates $2,500, or so much thereof as may be required to same purpose. The Commissioners have not put said bridge under contract, for the reason that in 1856 the State commuted with the then owner of said farm, Mrs. Eleanor Warner, for a bridge and paid her the sum of $1,500 as such commutation.

The papers relative to the same are on file in the canal department at Albany, but the Legislature was not probably aware of the fact at the time of the passage of such law. The undersigned desires to state the facts in the case, in order that the law may be so amended as to protect the Canal Commissioners in any action they may be directed to take under it, if action is desired, or a repeal of the law if that is deemed best.

Act, chapter 281, Laws of 1869, authorized the construction of vertical stone walls along the berme bank of the Erie canal, in the village of Macedon, Wayne county; and act, chapter 679, Laws of 1869, authorized the construction and maintenance of a ditch to drain the lands of Thomas McGuire, in the town of Murray, Orleans county. No appropriation was made in the "extraordinary repair fund" for those works, and the Auditor claimed that he was prohibited from paying for them out of the ordinary repair fund, as that by the constitution was pledged to other purposes; hence no action has been taken relative to letting said works.

GENESEE VALLEY CANAL.

The construction of a stone dam across Oil creek; a stone bulkhead at same place, and a short feeder extending thence to the canal below lock No. 101, is a valuable improvement for its cost, and has enabled the canal south of that point to be supplied with water without drawing any from the summit level, except for locking purposes. The raising of Ischua dam six and a half feet; constructing stone abutments to same; raising the embankments, and constructing a new stone bulkhead, all of which has been well done, will enable a larger supply of water to be obtained from this source, especially so, when the feeder leading thence to the canal is enlarged and improved, which is now being done.

The Ischua feeder aqueduct, across the valley of Oil creek, is completed, and is deemed to be a strong and substantial structure. It consists of nine spans, forty feet long each, with a timber and plank trunk supported by iron trusses resting on stone piers and abutments.

The work of raising Oil creek reservoir so as to hold an additional six feet depth of water above the former surface, was nearly completed and the reservoir full of water, when the old discharge culvert, located at the base of the bank, owing to the increased pressure upon it, gave signs of failure, and it was resolved to take it up and construct a new well and discharge pipes in its stead. The old culvert was constructed of stone masonry, with a tall well and gates at its head. Subsequently this well undermined and fell, and there was danger of the whole bank being carried out at once; but the great mass of stone and other material which fell into the rupture, checked the flow of water and held it, so that it became necessary to reduce it by cutting down from the top of the bank, which was successfully done, until it was drawn some twenty-five to thirty feet, when it undermined the temporary sluices used for that purpose, and the balance of the bank, to its base, for 100 feet in width, and for a portion of that width, some ten to fifteen feet deeper, was carried out. The water spread over the adjoining valley, carried away fences, three or four of the creek bridges, and covered several acres of meadow land in the immediate vicinity of the bank with its debris. But the damage was really much less than any one would have anticipated from the flowing out of so large a quantity of water in so short a time. The work of rebuilding said bank, inserting the discharge pipes and constructing the necessary masonry for same, is being done, and the work will be vigorously prosecuted, hoping that it may be so far advanced before the opening of navigation next spring, as that twenty-five to thirty feet depth of water may be held in reserve therein for canal uses.

The work on the slide bank at Portage has progressed steadily during the past season, and a large amount of material has been removed therefrom. About the 1st of July a break or slide of the towing-path occurred, which before had stood well, and since then it has been very difficult to maintain it so as to hold the water in the canal.

It has been rebuilt some three times since, and each time in an apparently substantial manner, but failed each time after a little use. The hill on the opposite side has also been gradually crowding in, and considerable excavation has been necessary to keep the channel sufficiently wide for the passage of boats. It is worse during wet than dry seasons, and the whole mass covering from three to four acres, is gradually moving toward the precipitous bank of the river 100 feet below, and when it reaches that point drops into the deep gorge below the second falls of the Genesee, 150 feet still lower. There seems to be no foundation sufficiently stable to hold the towing-path bank as now located, and the engineers are of opinion that by constructing the towing-path farther back and cutting off the opposite side to get width for the canal and reduce the hill above to a slope so flat as to equalize the pressure, will prevent further sliding of same.

The foregoing seems to be about the only thing that can be done. The appropriation for said canal is nearly exhausted, and it is important that means be provided at an early day, so that this and other work on said canal, which it is necessary should be done before the reopening of navigation, may be carried forward during the coming winter, with a view to its accomplishment by that time.

The bridges over Griffith creek feeder at Cuba, and over the canal at Mt. Morris, are well advanced and will soon be completed.

The widening, deepening and improving of the Genesee Valley canal, from the south end of the guard lock at rapids to its junction with the Erie canal at Rochester, was put under contract in 1868. The work was prosecuted during the fall of that year and the following winter and spring, but the contractor, deeming his prices too low in consequence of the difficulties encountered in its prosecution, applied to the Legislature for relief, which was granted by act chap. 914, Laws of 1869, and the Canal Board in pursuance of such law canceled said contract.

The work has since been relet and is now being vigorously prosecuted.

The steam dredge, purchased by the State last spring, designed more particularly for use on this canal, has been found beneficial and useful during the past season.

WORKS RECOMMENDED AND THE ESTIMATED COST OF SAME AND AMOUNT OF ADDITIONAL APPROPRIATIONS REQUIRED TO COMPLETE WORK NOW UNDER CONTRACT.

It is recommended that the canal between Commercial and Erie streets in the city of Buffalo, be made of a uniform width of eighty feet, and the banks faced with a heavy vertical wall built up from the bottom, as more particularly described in a previous part of this report. The cost of same is estimated at $30,000.

Black Rock pier, from the Grand Trunk railroad crossing to Bird Island, should be raised and recoped to conform to the increased height that will be given to the water in that distance by the extension of said pier into the rapids above said island, which is now being done. The estimated cost of same is $10,000.

The new towing-path along Black Rock harbor on construction section 368, has been completed as per plan adopted for same, but it is too low; for during the recent severe storms on the lake, the water rose so high that the swells were carried entirely over it and washed away the top covering. It should be raised about two feet higher. The estimated cost of same is $10,000.

In enlarging the canal at Tonawanda, a culvert at the "Brick Yard" so-called, was taken up and a ditch cut from thence to the State ditch culvert. This ditch does not answer the purpose, and it is recommended that a culvert be constructed there, to afford the necessary drainage to the surrounding lands. The estimated cost of same is $10,000.

The head walls and bulkhead of the Sulphur Spring guard lock are too low to hold back the extreme floods of Tonawanda creek. The lower walls and gates are also too low to admit the locking of boats when the water in the creek rises above them as has been the case during the past season. To remedy this, the walls and gates should be raised to such height as will enable the using of the lock at all times during the season of navigation, when the floods of the creek render it necessary that locking should be done there. The estimated cost of same is $11,000.

The pier at the head of the locks at Lockport should be extended fifty to sixty feet to enable boats to enter the locks with more ease, facility and safety than they now can for reasons previously stated in another part of this report. The estimated cost of same is $1,500.

Some considerable dificulty has been experienced in maintaining the towing-path along the high clay bluff, five miles west of Rochester, in consequence of slides from off the back side of the bank, it being located so immediately upon the brink thereof. It is recommended that the canal be changed, at that place, for a distance of 600 lineal feet, by placing the same farther back from the edge of the bluff, which, it is anticipated, will remedy the difficulty; as other portions which have been so changed stand well. The estimated cost of same is $2,500.

The old waste-weir on the three mile level east of Brighton is an indifferent structure, built of small cellar-wall stone, and the bottom is entirely too high to allow of draining the level through it. It is recommended that a new weir be constructed at that place of rock dressed masonry, and placed sufficiently low to drain said level to bottom on occasions when desired. The estimated cost of same is $2,000.

The channel leading from the waste-weir in the village of Newark, requires to be deepened and otherwise protected, to prevent its overflowing, and causing damage to cellars and streets in its vicinity on occasions of rapid discharge of water from the canal through said weir. The estimated cost of same is $1,000.

The estimated cost of doubling the remaining single locks on this division (14 in number) as revised by the engineer department, is $526,000. A similar revised estimate for removing wall bench, and constructing slope walls between Poorhouse lock and Lyons, amounts to $60,000. The amount at present appropriated for said works is for the locks $200,000, and for the walls $10,000; leaving a deficiency for locks of $326,000, and for the walls $50,000. These sums should be provided in order that said work may be fully completed at the earliest practicable period.

In the construction of the Genesee Valley canal through the town of Hume, the course of the Genesee was changed and a new channel cut for same, over which a bridge was constructed which has since been known as "the lattice bridge." A guard bank was also constructed to prevent overflow to the injury of the canal and lands adjoining said new channel. This bank is so much worn down and washed away by the floods as to require rebuilding.

There are also several places between Portage and Oramel where the canal requires protection against the encroachments of the river. The amount required for these purposes is estimated at $20,000.

The culvert under the canal south of Baird's creek is too small to carry off the flood waters. It should be enlarged, or an additional culvert constructed for that purpose and thus prevent breaks of the berme bank of the canal at that place, which occur almost annually, and afford better drainage to the adjoining low lands on the south side thereof. The estimated cost of same is $2,500.

To continue the work at the slide bank near Portage, so as to put and keep the canal at that place in navigable condition a large amount of work (more particularly described in a previous part of this report), must necessarily be done there. The engineers estimate the probable cost of same at $60,000.

For completing Oil creek reservoir and other works now in progress on said canal, and making such improvements at other places along the line of same as shall be necessary, a further appropriation of at least $25,500 will be required.

For the purpose of inserting iron needle beams in iron bridges already constructed, and the construction of such new iron bridges in villages, cities, and at important road crossings as are deemed advisable on this division of the canals, an appropriation of at least $45,000 will be necessary.

SUMMARY OF APPROPRIATIONS RECOMMENDED.

For improving and widening the canal and constructing vertical stone wall therein between Erie and Commercial streets, in the city of Buffalo	$30,000
For raising and recoping Black Rock pier between Grand Trunk railroad crossing and commencement of the new extension of said pier	10,000
For raising new towing-path along Black Rock harbor and to pay damages for earth taken from adjoining premises for the construction of said path	10,000
For constructing a culvert under the canal at "brick yard," so called at Tonawanda	10,000
For raising and improving guard lock at Sulphur Spring, Erie canal	11,000
For extending pier at head of locks at Lockport	1,500
For changing towing-path and improving line of Erie canal along high clay bluff, five miles west of Rochester.	2,500
For construction of a waste-weir on three mile level east of Brighton	2,000
For improving and protecting discharge channel of waste-weir at Newark	1,000
For doubling the locks	326,000
For removing wall benches and constructing slope walls.	50,000
For rebuilding guard bank in town of Hume, protecting canal against encroachments of Genesee river, constructing a culvert under canal south of Baird's creek aqueduct, opening the channel of said creek below said aqueduct, continuing the work necessary to be done at slide bank at Portage, completing the work now under contract and other improvements of the Genesee Valley canal.	110,000
For changing plans of bridges on western division	45,000
	$609,000

NAVIGATION AND MAINTENANCE OF THE CANALS.

This is a subject which has agitated the public mind, and elicited much discussion during the past few years, and one which, it is anticipated, the Legislature will be called upon to take action at its coming session. From the time of the original completion of the canals in this State, to the year 1854, they were kept in repair by Superintendents appointed by the Canal Board, subject, however, to the direction and control of the acting Commissioners, the Board then consisting of five members, three acting and two honorary, and so continued until the adoption of the present State Constitution in 1846, since which time the Board of Commissioners has consisted of but three members, and all acting. The letting of the repairs of the canals by contract commenced in 1854, and during that and the following two years, seven sections were let. Act, chapter 105, Laws of 1857, made it the duty of the Contracting Board "to let, by contract, all such completed superintendent's sections of the canals of this State as were not then under contract for repairs;" consequently, from that time to the present, the repairs of the canals have been mainly done by contract.

The above are the only modes in which the repairs of the canals of the State have been made since the inauguration of the canal system.

Another mode has, however, been recommended by some of the former State officers, to wit: "The itemizing system;" that is, to make or receive prices for each item of work of repairs, and pay for same at such prices only. The operation of such system, in its numerous details, would, I apprehend, be found measurably impracticable.

Each of the systems mentioned has its advocates, even among practical men, and the question arises as to what plan of repairs shall be adopted to make the canals reliable and efficient, with reasonable cost to the State. While we may not be able to hit upon the best plan at once, all things considered, may we not fix upon something that, in the present condition of matters, will combine such parts of the three systems as will meet the public requirements and necessities of the case, subject, of course, to such amendments as experience shall prove to be desirable and proper.

With this in view, the undersigned would suggest, for the consideration of the Legislature, the following:

1. Repeal the present law requiring the letting of the repairs of superintendent's sections of the canals by contract.

2. Authorize the Canal Board to cancel any of said repair contracts upon application of the party holding same; also power to cancel and terminate any of such contracts as they may deem for the interest of the State, and settle the same, whether surrendered voluntarily or otherwise, upon fair and equitable terms.

3. Authorize the Canal Board from time to time, hereafter, to determine the mode or manner in which such repairs shall be made, and such plan, when so devised, shall in all its details as to the care, maintenance, and navigation of the canals, be carried out by, and under the immediate control and direction of the Canal Commissioners as provided by existing laws. And in case said Board shall determine to let the repairs of any superintendent's section of the canals by contract, to be upon the following basis, to wit:

A. Reserve from such letting, the tending, repairs, and superintendence of the locks thereon.

B. Receive a price per cubic yard for all the prism excavation necessary to do, or that may be required done.

C. Receive a yearly price to cover the balance of all work necessary to do, or that may be required, except such prism excavation.

4. Such contracts to cover the whole ground without limit as to liability of the contractor from any cause.

5. A protective or police system should be established along the line of the canals to aid, guard, and protect navigation. The duty of such officers should be to see that the several levels of the canals are kept at a proper and uniform height; that water is not unnecessarily wasted or wrongfully taken from the canal; that timely warning is given of leaks or other dangers to the canal; that the locks are well and properly attended; that boats are not overloaded; that boatmen keep their boats moving, and in such shape at all times as not to, in any way or manner, obstruct the flow of water or navigation; and that for any willful neglect of these things, and the rules and regulations established by the Canal Board relative to the navigation of the canals, and the directions of said officer under the same, they shall be liable to a fine, which may be imposed by said officer, who shall also have power, if he shall deem it necessary, to arrest such offender at once, and take him before a proper tribunal for investigation.

Said class of officers to be connected with the engineer department, but appointed by the Canal Board upon nomination of the Commissioner in charge, and subject to removal by said Commissioner or said Canal Board.

6. Give the Canal Commissioners power individually to purchase materials and employ any force or take any property or go to any expense necessary in their judgement to prevent or repair any disaster to the canals without delay. Also, power to employ any help

at any time when they shall deem it necessary to aid boats in getting along the line of the canal or in passing the locks.

7. Give the Commissioners power in their discretion to contract for any work classed as repairs, which is susceptable of measurement, either by agreement or by advertising for bids therefor, and when so advertised, to be upon short notice and published in local papers only, under such rules and regulations as may be adopted by the Board of Canal Commissioners.

Business and Capacity of the Erie Canal.

The boats now in service on all the canals of the State are estimated at 6,870 in number. There were transported on all the canals in 1850, 3,076,617 tons, and in 1868, 6,442,225 tons; which was 667,000 tons in excess of any previous year, and an increase of more than 100 per cent during the eighteen years.

The number of tons transported on the Erie canal alone, during the same years, was in 1850, 1,635,089, and in 1868, 3,346,986, showing an increase per cent of tonnage on this canal during the same time nearly corresponding to that of all the canals; but the greater portion of such increase was attributable to that going to and coming from the western States and Canada. Hence it is fair to conclude that the future business and prosperity of this, the main artery of our system of internal improvements, will depend mainly upon the trade and traffic furnished it from outside the State and not from that within its borders.

The production of the western States and Canada varies somewhat yearly, dependent upon the seasons. Still, taking a series of years together, there will be a large aggregate increase to come forward. Other avenues of transit will, in all probability, absorb a large portion of such increase, varied however by the conditions of trade and the state of they money market.

The water lines will take the excess arising from fluctuations by other routes, and the balance of such increase, and the question is presented: Has the Erie canal the capacity to do this probable increase of business? This canal at the present time can do a much larger business than has yet been done upon it, and with the improvements completed, now contemplated by existing laws, to wit: Doubling the remaining single locks, removing the bench walls and providing sufficient supply of water for the canal (all which may be accomplished in the next three years), will then, with proper care and management, make it capable of doing double the amount done upon it in 1868, or a capacity in case of uniform business equal to the transport of 7,500,000 tons per annum.

The detentions to navigation are mainly in passing the locks, and the capacity of a canal may be determined by the number of lockages which can be made daily and maintained through the navigable season.

In 1867 a test was made at lock No. 30, west of Schenectady, to determine the time required to lock a boat. Of the 194 boats, locked during said trial, the shortest time was three minutes and the longest eleven and one-half minutes, or five and twelve-hundredth minutes to a boat as an average of the whole number, which would be equal to the passage with double locks, both working at the same time, of 562 boats in one day of twenty-four hours. But increase the time to ten minutes, and you have upon the same basis 288 boats in twenty-four hours. The tonnage of fully laden down boats is from 210 to 240 tons, and of up boats from fifty to 100 tons, averaging the up and down cargoes you have 150 tons as the cargoes of such boats. 288 lockages or boats of 150 tons each, gives 43,200 tons per day, or for 210 days 9,072,000 tons.

Natural water lines like the Hudson river and the great lakes, or artificial ones like the Erie canal where distances correspond, are undoubtedly the cheapest lines of transport so far as actual cost is concerned, but a large portion of the traffic of the country at the present time is influenced in its mode of transit by other considerations, such as time, necessity, convenience and certainty, and seeks the mode of conveyance best adapted to its needs, even at an increase of cost.

The speed of loaded boats on the Erie canal averages about one and one-half miles per hour, occupying some ten days from Buffalo to Albany. It is believed such motive power may be applied to the towing of boats as that the speed may be increased to two and one-quarter or two and one-half miles per hour, without exceeding present rates of cost of same per mile. Such application of propulsion as would make the latter rate of speed constant, continuous and certain, would enable the trip from Buffalo to Albany to be made in six to seven days, saving in time one-third and expenses in proportion. This accomplished, would meet the needs of certain freight as to time and certainty, and being at less cost, would add to the business of the canal that class of freight adapted to its mode of transport.

It is believed that the locks may be so improved and handled, as that twelve minutes to a lock will be all the time required to pass a boat, and this, in case of an uniform business, with double locks, equals 240 lockages or boats a day of 150 tons each, and for a season of seven months or 210 days, 7,560,000 tons.

Allowing the same rate of increase in the future, as in the past, this latter amount of tonnage would not be reached under eighteen years. It is, therefore, safe to calculate that the Erie canal has now and will have sufficient capacity to meet the demands upon it, for the next fifteen years. But, should an increased capacity be found necessary or desirable, at or before such time, it can be obtained by doubling the length of the locks and using what are called "train boats," two boats used and towed as one, carrying double the cargo and jointed so as to run the curves as easily as a short single boat with less traction in proportion, and very slight additional expense of crew.

Respectfully submitted.
JOHN D. FAY,
Canal Commissioner.

TABLES

ACCOMPANYING THE ANNUAL REPORT OF THE CANAL COMMISSIONERS.

The following is a Schedule of all Repair Contracts let in pursuance of Act, chap. 105, *Laws of* 1857, *to the present time, and shows the commencement of the several terms, the canal or section embraced in the contracts, the duration of each term, the annual compensation to the contractor, and the several amounts of cash deposited as security for the performance of the contracts, and the name of the contractor or contractors.*

Commencement of term.		Canal and section.		Duration of term.	Annual compensation.	Cash security.	Name of contractor.	Residence.	Remarks.
March	4, 1860	Erie, No.	1	3 years	$28,440	$4,000	Charles T. Baldwin	Oswego	Expired March 4, 1863.
March	4, 1863	do	1	3 years 303 days	39,900	4,000	Spencer Jackson	Medina	Expired January 1, 1867.
January	1, 1868	do	1	5 years	70,000	4,000	W. C. Stephens	Fulton	Expires January 1, 1872.
May	1, 1859	do	2	3 years	7,900		Smith A. Waterman	West Troy	Abandoned October 8, 1859.
March	4, 1860	do	2	3 years	9,700	2,000	William McClary	Amsterdam	Expired March 4, 1863.
March	4, 1863	do	2	3 years 303 days	14,500	4,000	Lewis Selye	Rochester	Abandoned August 1, 1864.
October	1, 1864	do	2	3¼ years	18,000	4,000	John H. Wooden	Oswego	Abandoned March 24, 1865.
October	1, 1865	do	2	3¼ years	17,740	4,000	Chas. A. Donaldson	Fultonville	Expired January 1, 1869.
March	1, 1869	do	2	4 10-12 years	25,975	4,000	Samuel Donaldson	Fultonville	Expires January 1, 1874.
May	1, 1859	do	3	3 years	7,440		John McDonald	Amsterdam	Expired May 1, 1862.
May	1, 1862	do	3	4⅔ years	10,900	4,000	Jared P. Dodge	Mount Morris	Abandoned July 21, 1863.
October	1, 1864	do	3	3¼ years	16,780	4,000	Vanslyck & Neff	Amsterdam	Expired January 1, 1868.
March	1, 1868	do	3	4 10-12 years	27,000	4,000	D. & A. Z. Neff	Amsterdam	Expires January 1, 1873.
May	1, 1859	do	4	3 years	8,849		John F. Hosch	Mohawk	Expired May 1, 1862.
May	1, 1862	do	4	4⅔ years	12,780	4,000	Hosch & Lowell	Mohawk	Abandoned August 1, 1864.
October	1, 1864	do	4	3¼ years	22,900	4,000	Samuel F. Case	Fulton	Expired January 1, 1868.
January	1, 1868	do	4	5 years	23,590	4,000	W. H. Mapes	Lockport	Surrendered May 1, 1869.
May	1, 1869	do	4	4 8-12 years	34,800	4,000	C. F. Braman	Mount Morris	Expires January 1, 1874.
May	1, 1859	do	5	3 years	2,995		Gideon Searl	Fultonville	Abandoned August 20, 1859.
March	4, 1860	do	5	3 years	5,890	2,000	Eli T. Bangs	Fayetteville	Expired March 4, 1863.
March	4, 1863	do	5	3 years 303 days	4,483	4,000	Philip Corkings	Chittenango	Abandoned August 1, 1864.
October	1, 1864	do	5	3¼ years	12,000	4,000	Edwin H. French	Fulton	Expired January 1, 1868.
March	1, 1868	do	5	4 10-12 years	16,500	4,000	Joseph Breed	De Witt	Surrendered June 15, 1869.
September	15, 1869	do	5	4 yrs. 3 ms. 15 ds.	18,900	4,000	Philip H. Hosch	Mohawk	Expires January 1, 1874.
February	1, 1859	do	7	3 years	2,473		Thomas J. Vanderlip	Penn Yan	Abandoned February 28, 1861.
May	1, 1861	do	7	5 years	3,490	4,000	Thomas Gale	Salina	Expired May 1, 1866.
May	1, 1866	do	7	4⅔ years	5,000	4,000	William Austin	Fayetteville	Expires January 1, 1871.
October	1, 1859	do	8	3 years	7,006	2,000	Lewis Selye	Rochester	Expired October 1, 1862.
November	1, 1862	do	8	4 1-6 years	4,940	4,000	Charles Nichols	De Witt	Abandoned September 22, 1864.
March	1, 1865	do	8	3 10-12 years	6,500	4,000	Myron Bangs	Fayetteville	Expired January 1, 1869.
March	1, 1869	do	8	4 10-12 years	18,000	4,000	A. G. Fish	Fulton	Expires January 1, 1874.
February	1, 1859	do	9	3 years	4,995		Robert M. Root	Pompey	Abandoned March 5, 1861.
May	1, 1861	do	9	5 years	7,000	4,000	Charles J. Hayden	Rochester	Expired May 1, 1866.
May	1, 1866	do	9	4⅔ years	6,900	4,000	Amos W. Chase	Fayetteville	Expires January 1, 1871.
May	1, 1859	do	10	3 years	6,190		Purdy M. Willetts	Macedon	Abandoned May 1, 1859.
October	1, 1859	do	10	3 years	7,800		John Dunn	Genesee Falls	Abandoned October 8, 1859.
March	4, 1860	do	10	3 years	9,489	2,000	John C. Hunt	Syracuse	Expired March 4, 1863.
March	4, 1863	do	10	3 years 303 days	11,960	4,000	Chester B. Thomas	Rochester	Expired January 1, 1867.

January 1, 1867	do	10	5 years	34,000	4,000	Benjamin Butler	Rochester	Expires January 1, 1872.
May 1, 1859	do	11	3 years	5,800		Hiram P. Haskins	Havana	Abandoned May 1, 1859.
October 1, 1859	do	11	3 years	8,280		Myron H. Mills	Rochester	Expired October 1, 1862.
November 1, 1862	do	11	4 1-6 years	11,900	4,000	Byron M. Hanks	Rochester	Expired January 1, 1867.
March 9, 1867	do	11	4 yrs. 9 ms. 22 ds.	43,500	4,000	V. F. Whitmore	Rochester	Expires January 1, 1872.
May 1, 1859	do	12	3 years	3,453		Lewis M. Loss	Lyons	Abandoned February 4, 1862.
April 1, 1862	do	12	4¾ years	6,700	4,000	Edward A. Mills	Rochester	Expired January 1, 1867.
January 1, 1867	do	12	5 years	8,952	4,000	Wm. McRae	Lockport	Surrendered Sept. 15, 1869.
September 15, 1869	do	12	4 yrs. 3 ms. 15 ds.	15,000	4,000	P. H. Linneen	Lockport	Expires January 1, 1874.
May 1, 1859	do	13	3 years	5,495		Thomas B. Morrow	Albany	Abandoned December 19, 1860.
March 15, 1861	do	13	5 years	9,800	4,000	Francis Hitchins	Lockport	Abandoned August 1, 1864.
October 1, 1864	do	13	3¼ years	14,400	4,000	N. L. Osborn	Eagle Harbor	Expired January 1, 1868.
January 1, 1868	do	13	5 years	19,400	4,000	F. M. Mills	Mount Morris	Expires January 1, 1873.
May 1, 1859	do	14	3 years	9,900		Shoemaker & Fillmore		Did not enter into contract.
March 1, 1860	do	14	3 years	14,500		Wm. H. Douglass	Buffalo	Expired March 1, 1863.
March 1, 1863	do	14	3 10-12 years	14,400	4,000	Archibald McArthur	Mount Morris	Abandoned August 1, 1864.
October 1, 1864	do	14	3¼ years	24,970	4,000	Andrew Spaulding	Fultonville	Expired January 1, 1868.
March 1, 1868	do	14	4 10-12 years	44,400	4,000	George D. Lord	Rochester	Expires January 1, 1873.
May 10, 1858	Champl'n No.	1	5 years	9,170		Sidney Seeley	Saratoga	Did not enter into contract.
May 1, 1859	do	1	3 years	8,973		Sampson Chaffee Ames	Schuylerville	Abandoned April 2, 1860.
August 1, 1860	do	1	5 years	8,659	2,000	Charles J. DeGraw	Fulton	Abandoned June 1, 1862.
October 1, 1862	do	1	4¼ years	13,848	4,000	Archibald McArthur	Mount Morris	Abandoned August 1, 1864.
October 1, 1864	do	1	3¼ years	25,800	4,000	Samuel G. Hart	Fulton	Expired January 1, 1868.
March 1, 1868	do	1	4 10-12 years	29,400	4,000	B. F. Wells	Fulton	Surrendered July 1, 1869.
September 15, 1869	do	1	4 yrs. 3 ms. 15 ds.	22,470	4,000	J. A. Wilson	Northumberland	Expires January 1, 1874.
May 1, 1859	do	2	3 years	6,800		Ephraim Owens	Albany	Abandoned April 2, 1860.
August 1, 1860	do	2	5 years	9,300	2,000	Anson Bangs	Fayetteville	Abandoned August 1, 1864.
October 1, 1864	do	2	3¼ years	19,400	4,000	Harvey Church	Sandy Hill	Expired January 1, 1868.
March 1, 1868	do	2	4 10-12 years	24,900	4,000	Henry S. Pratt	Fayetteville	Expires January 1, 1873.
May 1, 1859	do	3	3 years	5,350		Henry Holman	Albany	Abandoned April 2, 1860.
August 1, 1860	do	3	5 years	4,300	2,000	Solon Vandenburgh	Schuylerville	Abandoned May 26, 1863.
August 1, 1863	do	3	3 5-12 years	7,500	4,000	Henry D. Denison	Syracuse	Expired January 1, 1867.
January 1, 1867	do	3	5 years	17,750	4,000	Ryal G. Briggs	Fulton	Expires January 1, 1872.
March 1, 1861	Bl'k Riv., No.	1	5 years	2,999	2,000	Francis M. McFarlin	Rochester	Did not enter into contract.
May 1, 1861	do	1	4⅔ years	8,700	4,000	Edward H. Edwards	Chenango Forks	Expired January 1, 1866.
April 1, 1866	do	1	3¾ years	16,440	4,000	William McArthur	Rochester	Expires January 1, 1870.
March 1, 1861	do	2	5 years	4,178	2,000	Benj. F. Maxson	Little Falls	Expired January 1, 1866.
April 1, 1866	do	2	3¾ years	7,980	4,000	Archibald McArthur	Mount Morris	Expires January 1, 1870.
November 1, 1859	do	3	5 years	3,800	2,000	Ward & McVicar	Little Falls	Expired November 1, 1864.
March 1, 1865	do	3	3 10-12 years	9,750	4,000	Ward & McVicar	Little Falls	Expired January 1, 1869.
March 1, 1869	do	3	4 10-12 years	7,000	4,000	I. J. Wood	Syracuse	Expires January 1, 1874.
October 1, 1860	Chenango, No.	1	5 years	11,500	2,000	Edwin W. Parker	Cuba	Abandoned March 5, 1861.
May 1, 1861	do	1	5 years	13,990	4,000	A. Peck & Co.	Hamilton	Expired May 1, 1866.
May 1, 1866	do	1	4⅔ years	17,000	4,000	James J. Belden	Syracuse	Expires January 1, 1871.
October 1, 1860	do	2	5 years	5,600	2,000	John P. Smith	Norwich	Abandoned August 1, 1864.
October 1, 1864	do	2	3¼ years	16,400	4,000	Daniel McGerry	Rochester	Expired January 1, 1868.
January 1, 1868	do	2	5 years	9,970	4,000	John Hull	Binghamton	Expires January 1, 1873.
February 1, 1859	do	3	3 years	4,900		Holmes & Huntly	Manlius	Abandoned March 5, 1861.
May 1, 1861	do	3	5 years	7,000	4,000	Josiah Britnall	Syracuse	Expired May 1, 1866.
June 1, 1866	do	3	4 7-12 years	18,000	4,000	John R. Whitlock	Syracuse	Expires January 1, 1871.
October 1, 1860	Oneida L., No.	1	5 years	2,375	2,000	Wm. R. Chapman	Fultonville	Expired October 1, 1865.

Schedule of Repair Contracts—(*Continued.*)

Commencement of term.	Canal and section.	Duration of term.	Annual compensation.	Cash security.	Name of contractor.	Residence.	Remarks.
May 1, 1859	Oswego, No. 1	3 years	$2,800	....	Henry D. Denison	Syracuse	Expired May 1, 1862.
May 1, 1862	do 1	4⅔ years	9,000	$4,000	William Avery	De Witt	Expired January 1, 1867.
January 1, 1867	do 1	5 years	18,500	4,000	George Corkins	Salina	Expires January 1, 1872.
February 1, 1859	do 2	3 years	12,899	....	Stimson Ostrander	Oswego	Expired February 1, 1862.
May 1, 1862	do 2	4⅔ years	11,900	4,000	Charles E. Case	Fulton	Abandoned March 30, 1865.
October 1, 1865	do 2	3¼ years	21,000	4,000	A. Cadwell Belden	Geddes	Expired January 1, 1869.
March 1, 1869	do 2	4 10-12 years	28,400	4,000	A. Cadwell Belden	Geddes	Expires January 1, 1874.
April 1, 1859	Cay. & S., No. 1	3 years	3,574	....	Moses E. Ludington	Fulton	Abandoned March 15, 1861.
June 1, 1861	do 1	4 years	4,490	4,000	John Ecker	Fayetteville	Abandoned April 15, 1862.
July 1, 1862	do 1	4½ years	9,950	4,000	George M. Case	Fulton	Expired January 1, 1867.
January 1, 1867	do 1	5 years	20,000	4,000	George Collins	Syracuse	Expires January 1, 1872.
October 1, 1860	Crooked L. No. 1	5 years	3,869	2,000	Homer W. Randall	Penn Yan	Expired October 1, 1865.
October 1, 1865	do 1	3¼ years	6,990	4,000	R. Nelson Gere	Geddes	Expired January 1, 1869.
March 1, 1869	do 1	4 10-12 years	7,750	4,000	O. C. Knapp	Penn Yan	Expires January 1, 1874.
February 1, 1859	Chem'g & f. No. 1	3 years	13,475	....	Thomas W. Amsbury	Milo	Expired February 1, 1862.
April 1, 1862	do 1	4¾ years	15,960	4,000	James Bellows	Rochester	Expired January 1, 1867.
January 1, 1867	do 1	5 years	36,000	4,000	John Leahey	Rochester	Expires January 1, 1872.
May 1, 1859	Gen. Val., No. 1	3 years	4,800	....	Alfred C. Dodge	Mount Morris	Abandoned October 14, 1861.
February 1, 1862	do 1	5 years	8,472	4,000	William McArthur	Rochester	Abandoned August 1, 1864.
October 1, 1864	do 1	3¼ years	19,400	4,000	Wm. H. Reed	Pittsford	Expired January 1, 1868.
January 1, 1868	do 1	5 years	19,900	4,000	C. E. Candee	Fayetteville	Expires January 1, 1873.
March 15, 1861	do 2	5 years	12,540	3,000	John Lambert	Pittsford	Abandoned August 15, 1864.
October 1, 1865	do 2	3¼ years	17,000	4,000	Samuel Price	Portageville	Expired January 1, 1869.
March 1, 1869	do 2	4 10-12 years	27,749	4,000	H. G. Ames	Mount Morris	Surrendered August 1, 1869.
May 1, 1859	do 3	3 years	4,389	....	William Rumble	Belfast	Abandoned March 8, 1860.
August 1, 1860	do 3	5 years	7,433	2,000	William McArthur	Palmyra	Expired August 1, 1865.
October 1, 1865	do 3	3¼ years	9,990	4,000	N. Stanton Gere	Geddes	Expired January 1, 1869.
March 1, 1869	do 3	4 10-12 years	17,000	4,000	F. Bristol	Portageville	Expires January 1, 1874.

REPAIR CONTRACTS.

Commencement of contracts.	Canal and section.	Duration of contract.	Annual compensation.	SECURITY.		Names of contractors.	Residence of contractors.	Names of attorneys and assignees.	Residence of attorneys & assignees.	Contract expires.
				Cash.	U. S. bonds, pursuant to act ch. 577, Laws 1867.					
Jan. 1, 1867	Erie No. 1	5 years	$70,000	$4,000	......	Wm. C. Stephens	Fulton	Thomas Gale	Salina	Jan. 1, 1872
Mar. 1, 1869	do 2	4 10-12 years	25,975	4,000	$6,000	S. Donaldson	Fultonville	......	......	1, 1874
Mar. 1, 1868	do 3	4 10-12 years	27,000	4,000	6,000	D. & A. Z. Neff	Amsterdam	......	......	1, 1873
May 1, 1869	do 4	4 8-12 years	34,800	4,000	6,000	C. F. Brannan	Lockport	Peterson & Hosch	Mohawk	1, 1874
Sept. 15, 1869	do 5	4 y. 3 m. 15 d.	18,900	4,000	6,000	P. H. Hosch	Mohawk	J. F. Hosch	Mohawk	4, 1874
May 1, 1866	do 7	4⅔ years	5,000	4,000	......	Wm. Austin	Fayetteville	Clark Snook	Fayetteville	1, 1871
Mar. 1, 1869	do 8	4 10-12 years	18,000	4,000	6,000	A. G. Fish	Fulton	......	......	1, 1874
May 1, 1866	do 9	4⅔ years	6,900	4,000	......	Amos W. Chase	Fayetteville	Eaton & Mowry	Fayetteville	1, 1871
Jan. 1, 1867	do 10	5 years	34,000	4,000	......	Benjamin Butler	Rochester	Wm. Mudgett	Rochester	1, 1872
Mar. 9, 1867	do 11	4 y. 9 m. 22 d.	43,500	4,000	......	Val. F. Whitmore	Rochester	......	......	1, 1872
Sept. 15, 1869	do 12	4 y. 3 m. 15 d.	15,000	4,000	6,000	P. H. Linneen	Lockport	......	......	1, 1874
Jan. 1, 1868	do 13	5 years	19,400	4,000	6,000	F. M. Mills	Mt. Morris	......	......	1, 1873
Mar. 1, 1868	do 14	4 10-12 years	44,400	4,000	6,000	Geo. D Lord	Rochester	......	......	1, 1873
Sept. 15, 1869	Champlain No. 1	4 y. 3 m. 15 d.	22,470	4,000	6,000	J. A. Wilson	Northumberland	E. Raymond	Schuylerville	1, 1874
Mar. 1, 1868	do 2	4 10-12 years	24,900	4,000	6,000	H. S. Pratt	Fayetteville	......	......	1, 1873
Jan. 1, 1867	do 3	5 years	17,750	4,000	......	Ryal G. Briggs	Fulton	Willard Johnson	Fulton	1, 1872
April 1, 1866	Black Riv. No. 1	3¾ years	16,440	4,000	......	Wm. McArthur	Rochester	......	......	1, 1870
April 1, 1866	do 2	3¾ years	7,980	4,000	......	Archibald McArthur	Rochester	......	......	1, 1870
Mar. 1, 1869	do 3	4 y. 10 m.	7,000	4,000	6,000	I. J. Wood	Syracuse	Ward & McVicker	Lyon's Falls	1, 1874
May 1, 1866	Chenango No. 1	4⅔ years	17,000	4,000	......	James J. Belden	Syracuse	......	......	1, 1871
Jan. 1, 1868	do 2	5 years	9,970	4,000	6,000	John Hull	Binghampton	......	......	1, 1873
June 1, 1866	do 3	4 7-12 years	18,000	4,000	......	John R. Whitlock	Syracuse	F. N. Lord	Rochester	1, 1871
Jan. 1, 1867	Oswego No. 1	5 years	18,500	4,000	......	George Corkins	Salina	Mead Belden	Geddes	1, 1872
Mar. 1, 1869	do 2	4 y. 10 m.	28,400	4,000	6,000	A. C. Belden	Geddes	......	......	1, 1874
Jan. 1, 1867	Cayuga & Seneca	5 years	20,000	4,000	......	George Collins	Syracuse	George M. Case	Fulton	1, 1872
Mar. 1, 1869	Crooked Lake	4 10-12 years	7,750	4,000	6,000	O. C. Knapp	Penn Yan	......	......	1, 1874
Jan. 1, 1867	Chemung & Feed'r	5 years	36,000	4,000	......	John Leahy	Rochester	Jarvis Lord	Pittsford	1, 1872
Jan. 1, 1868	Gen. Valley No. 1	5 years	19,900	4,000	6,000	C. E. Candee	Fayetteville	......	......	1, 1873
Mar. 1, 1869	do 2	4 y. 10 m.	27,749	4,000	6,000	H. G. Ames	Mt. Morris	......	......	*Aug. 1, 1869
Mar. 1, 1869	do 3	4 y. 10 m.	17,000	4,000	6,000	F. Bristol	Portageville	......	......	Jan. 1, 1874

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* Surrendered.

REPAIR CONTRACTS.

Commencement of contract.	Canal and section.	Duration of contract.	Annual compensation.	One-twelfth of annual compensation.	Fifteen per cent of one-twelfth annual compensation retained.	Monthly dues.	One-twelfth amount of schedule.	Monthly dues less one-tw'lfth amount of schedule.
January 1, 1867	Erie, No. 1	5 years	$70,000	$5,833 33	$875 00	$4,958 33	....	....
March 1, 1869	do 2	4 years 10 months	25,975	2,164 58	324 68	1,839 90	....	....
March 1, 1868	do 3	4 years 10 months	27,000	2,250 00	337 50	1,912 50	....	....
May 1, 1869	do 4	4 years 8 months	34,800	2,900 00	435 00	2,465 00	$1,022 45	$1,442 55
September 15, 1869	do 5	4 yrs. 3 mths. 15 dys.	18,900	1,575 00	236 25	1,338 75	293 79	1,044 96
May 1, 1866	do 7	4 years 8 months	5,000	416 66	62 50	354 16	....	....
March 1, 1869	do 8	4 years 10 months	18,000	1,500 00	225 00	1,275 00	....	....
March 1, 1866	do 9	4 years 8 months	6,900	575 00	86 25	488 75	....	....
January 1, 1867	do 10	5 years	34,000	2,833 33	425 00	2,408 33	....	....
March 9, 1867	do 11	4 yrs. 9 mths. 22 dys.	43,500	3,625 00	543 75	3,081 25	....	....
September 15, 1869	do 12	4 yrs. 3 mths. 15 dys.	15,000	1,250 00	187 50	1,062 50	618 00	444 50
January 1, 1868	do 13	5 years	19,400	1,616 66	242 50	1,374 16	....	....
March 1, 1868	do 14	4 years 10 months	44,400	3,700 00	555 00	3,145 00	....	....
September 15, 1869	Champlain, No. 1	4 yrs. 3 mths. 15 dys.	22,470	1,872 50	280 87	1,591 63	549 18	1,042 45
March 1, 1868	do 2	4 years 10 months	24,900	2,075 00	311 25	1,763 75	....	....
January 1, 1867	do 3	5 years	17,750	1,479 16	221 87	1,257 29	....	....
April 1, 1866	Black River, No. 1	3 years 9 months	16,440	1,370 00	205 50	1,164 50	....	....
April 1, 1866	do 2	3 years 9 months	7,980	665 00	99 75	565 25	....	....
March 1, 1869	do 3	4 years 10 months	7,000	583 33	87 50	495 83	....	....
May 1, 1866	Chenango, No. 1	4 years 8 months	17,000	1,416 66	212 50	1,204 16	....	....
January 1, 1868	do 2	5 years	9,970	830 83	124 62	706 21	....	....
June 1, 1866	do 3	4 years 7 months	18,000	1,500 00	225 00	1,275 00	....	....
January 1, 1867	Oswego, No. 1	5 years	18,500	1,541 66	231 25	1,310 41	....	....
March 1, 1869	do 2	4 years 10 months	28,400	2,366 66	355 00	2,011 66	....	....
January 1, 1867	Cayuga and Seneca	5 years	20,000	1,666 66	250 00	1,416 66	....	....
March 1, 1869	Crooked Lake	4 years 10 months	7,750	645 83	96 87	548 96	....	....
January 1, 1867	Chemung and Feeder	5 years	36,000	3,000 00	450 00	2,550 00	....	....
January 1, 1868	Genesee Valley, No. 1	5 years	19,900	1,658 33	248 75	1,409 58	....	....
March 1, 1869	do 3	4 years 10 months	17,000	1,416 66	212 50	1,204 16	....	....

Repair Contracts—(Continued.)

Commencement of Contract.	Canal and section.	Fifteen per cent retained due annually.	Names of contractors.	Residence of contractor.	Names of assignees.	Residence of assignee.	Contract surrendered or abandoned.	Contract expires.
January 1, 1867	Erie, No. 1	$10,500 00	William C. Stephens	Fulton	Thomas Gale	Salina		January 1, 1872.
March 1, 1869	do 2	3,896 25	Samuel Donaldson	Fultonville				January 1, 1874.
March 1, 1868	do 3	4,050 00	D. & A. Z. Neff	Amsterdam	Read & Morrell	Canajoharie		January 1, 1873.
May 1, 1869	do 4	5,220 00	C. F. Braman	Mount Morris	Peterson & Hosch	Mohawk		January 1, 1874.
September 15, 1869	do 5	2,835 00	Philip H. Hosch	Mohawk	John F. Hosch	Mohawk		January 1, 1874.
May 1, 1866	do 7	750 00	William Austin	Fayetteville	Clark Snook	Fayetteville		January 1, 1871.
March 1, 1869	do 8	2,700 00	Aaron G. Fish	Fulton				January 1, 1874.
March 1, 1866	do 9	1,035 00	Amos W. Chase	Fayetteville	Eaton & Mowry	Fayetteville		January 1, 1871.
January 1, 1867	do 10	5,100 00	Benjamin Butler	Rochester	Wm. Mudgett	Rochester		January 1, 1872.
March 9, 1867	do 11	6,525 00	V. F. Whitmore	Rochester				January 1, 1872.
September 15, 1869	do 12	2,250 00	P. H. Linneen	Lockport				January 1, 1874.
January 1, 1868	do 13	2,910 00	F. M. Mills	Mount Morris				January 1, 1873.
March 1, 1868	do 14	6,660 00	George D. Lord	Rochester				January 1, 1873.
September 15, 1869	Champlain, No. 1	3,370 50	James A. Wilson	Northumberland				January 1, 1874.
March 1, 1868	do 2	3,735 00	Henry S. Pratt	Fayetteville	Clark Snook	Fayetteville		January 1, 1873.
January 1, 1867	do 3	2,662 50	Ryal G. Briggs	Fulton	Willard Johnson	Fulton		January 1, 1872.
April 1, 1866	Black River, No. 1	2,466 00	William McArthur	Rochester				January 1, 1870.
April 1, 1866	do 2	1,197 00	Archibald McArthur	Rochester				January 1, 1870.
March 1, 1869	do 3	1,050 00	Israel G. Wood	Geddes	Ward & McVicker	Lyon's Falls		January 1, 1874.
May 1, 1866	Chenango, No. 1	2,550 00	James J. Belden	Syracuse				January 1, 1871.
January 1, 1868	do 2	1,495 50	John Hull	Binghamton				January 1, 1873.
June 1, 1866	do 3	2,700 00	J. R. Whitlock	Syracuse	F. N. Lord	Rochester		January 1, 1871.
January 1, 1867	Oswego, No. 1	2,775 00	George Corkins	Salina	Mead Belden	Geddes		January 1, 1872.
March 1, 1869	do 2	4,260 00	A. C. Belden	Geddes				January 1, 1874.
January 1, 1867	Cayuga and Seneca	3,000 00	George Collins	Syracuse	George M. Case	Fulton		January 1, 1872.
March 1, 1869	Crooked Lake	1,162 50	Oliver C. Knapp	Penn Yan				January 1, 1874.
January 1, 1867	Chemung and Feeder	5,400 00	John Lehey	Rochester	Jarvis Lord	Rochester		January 1, 1872.
January 1, 1868	Genesee Valley, No. 1	2,985 00	C. E. Candee	Fayetteville				January 1, 1873.
March 1, 1869	do 3	2,550 00	Fayette Bristol	Portageville				January 1, 1874.

The following is a Schedule of Repair Contracts, with the percentage allowed in pursuance of Act, chapter 252, *Laws of* 1864.

Commencement of term.	Canal and section.	Duration of term.	Original annual compensation.	Per-centage allowed	Annual compensation, including percentage.	Abandoned.	Name of contractor.	Expires.
March 4, 1863	Erie, No. 1	3¾ years	$39,900 00	72	$68,628 00		Spencer Jackson	January 1, 1867
March 4, 1863	do 2	3 yrs. 303 days	14,500 00	61		August 1, 1864	Lewis Selye	
May 1, 1862	do 4	4⅔ years	12,780 00	65		August 1, 1864	Hoech & Lowell	
March 4, 1863	do 5	4⅔ years	4,483 00	70		August 1, 1864	Philip Corking	
May 1, 1861	do 7	5 years	3,490 00	62	5,653 80		Thomas Gale	May 1, 1866
Nov. 1, 1862	do 8	4 1-6 years	4,940 00	60		Sept. 22, 1864	Chas. Nichols	
May 1, 1861	do 9	5 years	7,000 00	61	11,270 00		Chas. J. Hayden	May 1, 1866
March 4, 1863	do 10	3 yrs. 303 days	11,960 00	62	19,375 20		Chester B. Thomas	January 1, 1867
Nov. 1, 1862	do 11	4 1-6 years	11,900 00	60	19,040 00		Byron M. Hanks	January 1, 1867
April 1, 1862	do 12	4¾ years	6,700 00	51	10,117 00		Edward A. Mills	January 1, 1867
March 15, 1861	do 13	5 years	9,800 00	70		August 1, 1864	Francis Hitchens	
March 1, 1863	do 14	3 10-12 years	14,400 00	70		August 1, 1864	Archibald McArthur	
April 1, 1862	Chemung, No. 1	4¾ years	15,960 00	60	25,536 00		James Bellows	January 1, 1867
May 1, 1861	Chenango, No. 1	5 years	13,990 00	50	20,985 00		A. Peck & Co.	May 1, 1866
Oct. 1, 1860	do 2	5 years	5,600 00	50		August 1, 1864	John P. Smith	
May 1, 1861	do 3	5 years	7,000 00	53	10,710 00		Josiah Britnell	May 1, 1866
May 1, 1862	Oswego, No. 1	4⅔ years	9,000 00	35	12,150 00		Wm. Avery	January 1, 1867
May 1, 1862	do 2	4⅔ years	11,900 00	50	17,850 00	March 30, 1865	Chas. E. Case	
July 1, 1862	Cayuga and Seneca, No. 1	4½ years	9,950 00	41	14,029 50		George M. Case	January 1, 1867
Oct. 1, 1860	Crooked Lake, No. 1	5 years	3,869 00	55	5,996 95		H. W. Randall	October 1, 1865
Feb. 1, 1862	Genesee Valley, No. 1	5 years	8,472 00	60		August 1, 1864	Wm. McArthur	
March 15, 1861	do 2	5 years	12,540 00	60		August 15, 1864	John Lambert	
Aug. 1, 1860	do 3	5 years	7,433 00	50	11,149 50		Wm. McArthur	August 1, 1865
Oct. 1, 1862	Champlain, No. 1	4¼ years	13,848 00	60		August 1, 1864	Archibald McArthur	
Aug. 1, 1860	do 2	5 years	9,300 00	60		August 1, 1864	Anson Bangs	
Aug. 1. 1863	do 3	3 5-12 years	7,500 00	60	12,000 00		H. D. Denison	January 1, 1867
May 1, 1861	Black River, No. 1	4⅔ years	8,700 00	50	13,050 00		Edward H. Edwards	January 1, 1866
March 1, 1861	do 2	5 years	4,178 00	50	6,267 00		Benj. F. Maxon	March 1, 1866
Nov. 1, 1859	do 3	5 years	3,800 00	50	5,700 00		Ward & McVickar	Nov. 1, 1864

STATEMENT showing amounts expended by superintendents of repairs and paid repair contractors, and average cost per mile on each and all canals, from 1827 *to* 1869, *inclusive.*

YEARS.	ERIE AND CHAMPLAIN CANALS.		OSWEGO CANAL.		CAYUGA AND SENECA CANAL.		CHEMUNG CANAL.	
	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.
1827	$232,472	$538	....	....	....	....	....	....
1828	225,846	518	$8,687	$239	....	....	....	....
1829	232,981	539	13,008	361	$8,499	$386	....	....
1830	202,968	461	12,500	349	5,477	247	....	....
1831	168,940	388	9,170	254	3,363	153	....	....
1832	327,302	743	12,259	340	5,356	243	....	....
1833	328,585	746	11,295	313	8,243	374	$24,666	$666
1834	429,659	976	12,181	338	8,832	401	25,659	693
1835	392,921	893	16,397	458	9,685	440	9,616	259
1836	310,183	704	51,637	1,434	29,896	1,358	9,665	261
1837	365,466	830	57,908	1,608	28,539	1,297	14,569	393
1838	374,713	851	49,360	1,371	18,994	861	13,494	364
1839	297,729	676	24,463	679	23,397	1,063	13,308	361
1840	364,292	827	34,796	915	24,740	1,124	12,401	335
1841	255,687	581	26,406	694	13,940	633	23,360	631
1842	322,854	733	31,427	827	15,829	719	34,594	935
1843	297,614	676	23,678	623	10,938	497	14,295	386
1844	371,449	844	28,598	752	14,442	656	12,708	344
1845	399,094	907	46,689	1,297	14,191	645	17,978	485
1846	371,185	843	53,546	1,409	12,325	560	14,264	385
1847	380,388	864	39,551	1,040	14,192	645	15,917	430
1848	503,953	1,145	72,783	2,021	13,009	591	27,228	736
1849	395,681	899	32,792	863	11,824	537	24,306	657
1850	478,887	1,088	31,805	837	10,831	492	33,230	852
1851	427,458	972	31,045	817	20,576	895	37,741	968
1852	558,329	1,232	42,728	1,124	27,606	1,200	32,620	836
1853	575,777	1,271	38,026	1,000	17,421	680	24,366	625
1854	677,270	1,548	86,529	2,277	17,095	690	30,653	786
1855	505,608	1,154	59,192	1,448	12,880	560	22,853	586
1856	454,865	1,031	59,854	1,574	9,864	448	17,209	441
1857	458,742	1,035	78,017	2,053	13,234	575	87,314	2,238
1858	435,916	978	107,698	2,834	21,769	946	105,605	2,862
1859	446,746	999	48,253	1,269	5,850	234	21,965	563
1860	229,008	526	15,689	412	3,493	159	12,431	319
1861	206,952	476	25,552	672	19,284	876	23,455	601
1862	240,650	538	31,191	725	19,059	657	27,024	692
1863	323,626	744	29,090	765	11,829	537	80,588	2,066
1864	519,505	1,194	27,414	721	14,973	681	29,141	747
1865	816,660	1,877	238,623	6,279	19,965	907	88,398	2,266
1866	665,168	1,529	59,634	1,569	16,427	746	49,304	1,265
1867	489,170	1,125	44,463	1,170	18,848	857	106,625	2,733
1868	443,577	1,020	88,591	2,331	20,000	910	44,932	1,152
1869	609,236	1,401	42,310	1,118	21,456	975	37,668	966

Statement of superintendents' expenditure — (Continued).

YEARS.	CROOKED LAKE CANAL.		CHENANGO CANAL.		GENESEE VALLEY CANAL.		ONEIDA LAKE CANAL.	
	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.
1827	....	....	....	....	....	....	....	....
1828	....	....	....	....	....	....	....	....
1829	....	....	....	....	....	....	....	....
1830	....	....	....	....	....	....	....	....
1831	....	....	....	....	....	....	....	....
1832	....	....	....	....	....	....	....	....
1833	....	....	....	....	....	....	....	....
1834	$2,653	$331	....	....	....	....	....	....
1835	3,556	454	....	....	....	....	....	....
1836	4,739	592	....	....	....	....	....	....
1837	6,214	776	$19,509	$201	....	....	....	....
1838	4,454	556	10,809	214	....	....	....	....
1839	3,557	443	17,248	177	....	....	....	....
1840	4,501	562	15,427	159	$4,529	$125	....	....
1841	9,034	1,129	15,563	160	10,460	290	$3,370	$561
1842	8,113	1,014	18,955	195	17,749	341	3,606	601
1843	4,047	505	15,062	155	15,210	292	2,232	372
1844	3,951	493	15,959	164	15,556	299	1,636	272
1845	4,765	595	18,951	195	16,901	325	1,933	322
1846	5,309	663	18,452	190	17,399	334	17,875	2,979
1847	5,890	736	18,859	194	15,782	303	5,842	973
1848	8,518	1,064	20,901	215	26,577	510	1,855	309
1849	10,296	1,287	25,888	267	18,183	350	1,160	890
1850	5,620	905	27,189	280	18,575	357	4,892	815
1851	5,319	665	29,832	307	32,938	633	3,591	449
1852	7,751	969	36,730	375	79,587	904	6,360	1,060
1853	4,932	616	38,243	394	55,766	634	6,166	770
1854	5,132	641	49,187	507	48,093	546	10,440	1,740
1855	4,316	539	49,232	486	49,000	415	6,236	1,039
1856	3,647	456	13,903	143	34,271	381	2,589	432
1857	4,447	556	27,826	265	60,650	514	3,119	519
1858	9,803	1,125	44,114	455	80,911	686	4,104	586
1859	4,849	606	26,067	269	46,490	394	3,975	568
1860	4,598	575	26,934	278	38,518	304	4,059	676
1861	6,186	773	22,593	233	28,450	224	3,242	540
1862	7,557	933	29,086	299	64,711	534	2,475	353
1863	5,142	643	31,897	328	49,984	393	2,375	395
1864	23,697	2,962	40,846	421	166,227	1,309	2,543	424
1865	36,200	4,525	100,450	1,036	231,902	1,826	2,365	394
1866	7,110	889	81,132	837	93,803	738	594	88
1867	7,396	924	104,598	1,078	93,843	735	....	....
1868	7,216	902	64,053	660	72,086	552	....	....
1869	7,585	948	48,827	503	83,185	655	....	....

Statement of superintendents' expenditure—(Continued).

YEARS.	BLACK RIVER CANAL.		ONEIDA RIVER IMPROVEMENT. BALDWINSVILLE CANAL.		Total miles.	Total cost of repairs.	Total average per mile.
	Cost of repairs.	Average per mile.	Cost of repairs.	Average per mile.			
1827					400	$232, 473	$528
1828					478	224, 433	490
1829					500	254, 433	509
1830					500	221, 005	442
1831					500	180, 773	361
1832					500	344, 917	690
1833					537	372, 789	694
1834					545	478, 964	879
1835					545	432, 118	793
1836					545	406, 122	745
1837					642	492, 144	766
1838					642	481, 774	750
1839					642	379, 769	591
1840					694	460, 686	664
1841					700	357, 828	511
1842					700	452, 559	646
1843					700	383, 076	547
1844					700	464, 329	663
1845					700	520, 452	743
1846					700	510, 355	729
1847					700	496, 424	709
1848					700	674, 777	964
1849					700	521, 122	744
1850	$15, 508	$398	$412	$21	762	626, 950	823
1851	21, 516	448	2, 250	112	817	722, 259	762
1852	30, 731	667	2, 084	104	887	824, 533	929
1853	26, 830	488	1, 554	78	887	789, 082	901
1854	28, 548	570	3, 255	162	887	960, 265	1, 082
1855	34, 000	578	3, 706	185	901	781, 688	868
1856	17, 204	441	2, 482	124	901	616, 014	684
1857	15, 179	155	3, 591	179	909	752, 575	828
1858	18, 622	190	2, 797	140	917	878, 721	958
1859	24, 926	255	1, 079	54	917	630, 615	688
1860	22, 287	237			866	356, 966	412
1861	23, 402	249	1, 070	89	878	360, 187	410
1862	23, 629	241	450	22	924	342, 817	371
1863	20, 455	217			924	555, 052	601
1864	21, 646	230	632	53		846, 624	943
1865	48, 488	515	499	42		1, 584, 648	1, 765
1866	46, 911	500	12, 810	1, 068	898	1, 032, 824	1, 151
1867	42, 320	450	93	8	898	906, 856	1, 010
1868	34, 664	369			898	775, 119	901
1869	67, 426	717			898	917, 696	1, 022

Add payments on account of repairs by the Canal Commissioners, exclusive of payments to contractors for repairs, viz.:		
By R. C. Dorn, Erie canal	$22,652 71	
Oliver Bascom, Erie canal	14,682 80	
Stephen T. Hayt, Erie canal	17,569 99	
John D. Fay, Erie canal	35,224 90	
		$90,130 40
R. C. Dorn, Champlain canal	$4,393 16	
Oliver Bascom, Champlain canal	82,866 81	
		87,259 97
Stephen T. Hayt, Oswego canal		73,996 60
Stephen T. Hayt, Cayuga and Seneca canal		401 75
Stephen T. Hayt, Chemung canal		523 23
Stephen T. Hayt, Crooked Lake canal		424 25
Stephen T. Hayt, Chenango canal		4,138 42
John D. Fay, Genesee Valley canal		53,465 36
R. C. Dorn, Black River canal	$474 50	
Oliver Bascom, Black River canal	261 62	
		736 12
Total amount expended for ordinary repairs from 1st October, 1868, to 30th September, 1869		$1,178,771 67
Add payments on account of extraordinary repairs by Canal Commissioners, viz.:		
By R. C. Dorn and Oliver Bascom, Eastern Division	$171,148 09	
Stephen T. Hayt, Middle Division	199,641 59	
John D. Fay, Western Division	249,563 25	
		620,352 93
Total amount expended for ordinary and extraordinary repairs from 1st October, 1868, to 30th September, 1869		$1,799,124 60

TABLE

Exhibiting the date of the opening and the closing of the Hudson river, and the number of days open; also the time of commencement and close of each navigable season of canals, and the number of days of navigation since 1824; *also the date of the opening of Lake Erie since* 1827.

Opening and Closing of the Hudson River.			Commencement and close of navigation of Erie Canal.			Opening of the lake.
River open.	River closed.	Days open.	Canal open.	Canal closed.	Navigable days.	
March 3, 1824	January 5, 1824	309	April 30, 1824	December 4	219	
March 6, 1825	December 13, 1825	283	April 12, 1825	December 5	238	
February 25, 1826	December 13, 1826	302	April 20, 1826	December 18	243	
March 20, 1827	November 25, 1827	251	April 22, 1827	December 18	241	April 21, 1827
February 8, 1828	December 23, 1828	220	March 27, 1828	December 20	269	April 1, 1828
April 1, 1829	January 14, 1829	286	May 2, 1829	December 17	230	May 10, 1829
March 15, 1830	December 25, 1830	283	April 20, 1830	December 17	242	May 5, 1830
March 15, 1831	December 6, 1831	262	April 16, 1831	December 1	230	May 8, 1831
March 25, 1832	December 21, 1832	289	April 25, 1832	December 21	241	April 27, 1832
March 21, 1833	December 13, 1833	277	April 19, 1833	December 12	238	April 23, 1833
February 29, 1834	December 15, 1834	291	April 17, 1834	December 12	240	April 6, 1834
March 25, 1835	November 30, 1835	268	April 15, 1835	November 30	230	May 8, 1835
April 4, 1836	December 7, 1836	244	April 25, 1836	November 26	216	April 27, 1836
March 27, 1837	December 14, 1837	261	April 20, 1837	December 9	234	May 16, 1837
March 19, 1838	November 25, 1838	257	April 12, 1838	November 25	228	March 31, 1838
March 25, 1839	November 18, 1839	286	April 20, 1839	December 16	241	April 11, 1839
February 25, 1840	November 5, 1840	285	April 20, 1840	December 9	228	April 27, 1840
March 24, 1841	November 19, 1841	286	April 24, 1841	November 30	221	April 14, 1841
February 4, 1842	November 28, 1842	308	April 20, 1842	November 28	222	March 7, 1842
April 13, 1843	December 10, 1843	242	May 1, 1843	November 30	214	May 6, 1843
March 18, 1844	December 17, 1844	278	April 18, 1844	November 26	222	March 14, 1844
February 24, 1845	December 3, 1845	283	April 15, 1845	November 29	228	April 3, 1845
March 18, 1846	December 14, 1846	275	April 16, 1846	November 25	224	April 11, 1846
April 7, 1847	December 25, 1847	263	May 1, 1847	November 30	214	April 23, 1847
March 22, 1848	December 27, 1848	292	May 1, 1848	December 9	223	April 9, 1848
March 19, 1849	December 26, 1849	286	May 1, 1849	December 5	219	March 25, 1849
March 10, 1850	December 17, 1850	282	April 22, 1850	December 11	234	March 25, 1850
February 25, 1851	December 14, 1851	293	April 15, 1851	December 5	235	April 2, 1851
March 28, 1852	December 23, 1852	270	April 20, 1852	December 16	239	April 20, 1852
March 23, 1853	December 21, 1853	274	April 20, 1853	December 20	245	April 14, 1853
March 17, 1854	December 8, 1854	266	May 1, 1854	December 3	217	April 29, 1854
March 27, 1855	December 20, 1855	268	May 1, 1855	December 10	224	April 21, 1855
April 11, 1856	December 14, 1856	248	May 5, 1856	December 4	214	May 2, 1856
February 27, 1857	December 27, 1857	303	May 6, 1857	December 15	223	April 27, 1857

Table exhibiting the date of the opening and closing of the Hudson River, &c.—(Continued).

OPENING AND CLOSING OF THE HUDSON RIVER.			COMMENCEMENT AND CLOSE OF NAVIGATION OF ERIE CANAL.			Opening of the lake.
River open.	River closed.	Days open.	Canal open.	Canal closed.	Navigable days.	
March 20, 1858	December 17, 1858	273	April 28, 1858	December 8	225	April 15, 1858
March 13, 1859	December 10, 1859	273	April 15, 1859	December 12	242	April 7, 1859
March 6, 1860	December 14, 1860	283	April 25, 1860	December 12	232	April 17, 1860
March 5, 1861	December 23, 1861	294	May 1, 1861	December 10	224	April 13, 1861
April 4, 1862	December 19, 1862	259	May 1, 1862	December 10	224	April 15, 1862
April 3, 1863	December 11, 1863	253	May 1, 1863	December 9	223	April 3, 1863
March 11, 1864	December 12, 1864	277	April 30, 1864	December 8	223	April 13, 1864
March 22, 1865	December 16, 1865	270	May 1, 1865	December 12	226	April 26, 1865
March 20, 1866	December 15, 1866	270	May 1, 1866	December 12	226	April 28, 1866
March 26, 1867	December 8, 1867	257	May 6, 1867	December 20	229	April 21, 1867
March 24, 1868	December 5, 1868	252	May 4, 1868	December 7	217	April 19, 1868
April 5, 1869	December 6, 1869	248	May 6, 1869	December 10	218	May 1, 1869

The Genesee Valley canal was opened the 13th day of May, 1867. All the canals except the Erie were closed on the 12th day of December, 1867.

In consequence of the damages done by the freshet of the spring of 1869 to the Eastern Division of the canals, the time for opening the canals for navigation on said Division was extended to May 10, 1869.

SCHEDULE of contracts let by Board of Canal Commissioners under Acts, chap. 327, *Laws of* 1854, *and chap.* 554, *Laws of* 1855, *showing the commencement of the several terms, the canal or section embraced in the contract, the duration of each term, and the annual compensation to the contractors.*

Commencement of term.	Canal Section.	Duration of term.	Annual compensation.	Remarks.
October 1, 1854	Section 3, Erie canal	Five years.	$7,370	Expired October 1, 1859.
March 1, 1855	Section 1, Erie canal	do	43,000	Expired March 4, 1860.
October 1, 1855	Section 1, Chenango canal	do	14,700	Expired October 1, 1860.
October 1, 1855	Section 2, Chenango canal	do	6,000	Expired October 1, 1860.
October 1, 1855	Oneida Lake canal	do	3,975	Expired October 1, 1860.
January 1, 1856	Crooked Lake canal	do	4,473	Expired October 1, 1860.
January 1, 1856	Section 1, Black River canal	do	3,999	Expired January 1, 1861.
January 1, 1856	Section 2, Black River canal	do	9,985	Expired January 1, 1861.
April 15, 1858	Addition to section 2, Black river canal, chap. 185, Laws of 1858	....	2,000	Expired January 1, 1861.
Febru'ry 1, 1856	Section 2, Genesee Valley canal	Five years.	13,900	Expired Febru'y 1, 1861.

STATEMENT of the number, class and tonnage of boats on the canals on the 1*st of January,* 1844; *also the number, class and tonnage of boats built and registered in each year, subsequently to, and including* 1862.

TONS.	Prior to January, 1844.		1844.		1845.		1846.		1847.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
300	....	....	....	....	....	....	....	....	....	....
250	....	....	....	....	....	....	....	....	....	....
240	....	....	....	....	....	....	....	....	....	....
230	....	....	....	....	....	....	....	....	....	....
225	....	....	....	....	....	....	....	....	....	....
220	....	....	....	....	....	....	....	....	....	....
210	....	....	....	....	....	....	....	....	....	....
200	....	....	....	....	....	....	....	....	....	....
195	....	....	....	....	....	....	....	....	....	....
190	....	....	....	....	....	....	....	....	....	....
180	....	....	....	....	....	....	....	....	....	....
175	....	....	....	....	....	....	....	....	....	....
170	....	....	....	....	....	....	....	....	....	....
160	....	....	....	....	....	....	....	....	....	....
150	....	....	....	....	....	....	....	....	....	....
145	....	....	....	....	....	....	....	....	....	....
140	....	....	....	....	....	....	....	....	....	....
135	....	....	....	....	....	....	....	....	....	....
130	....	....	....	....	....	....	....	....	....	....
125	....	....	....	....	....	....	....	....	....	....
120	....	....	....	....	....	....	....	....	....	....
115	....	....	....	....	....	....	....	....	....	....
110	....	....	....	....	....	....	....	....	....	....
105	....	....	....	....	....	....	....	....	....	....
100	....	....	....	....	....	....	....	....	....	....
95	....	....	....	....	4	95	1	95	6	570
90	2	180	1	90	1	360	6	540	27	2,430
85	1	85	....	....	1	85	7	595	45	3,825
80	3	240	9	720	13	1,040	100	8,000	560	44,800
75	14	1,050	33	2,475	60	4,500	186	13,950	553	41,475
70	175	12,250	124	8,680	107	7,490	123	8,610	162	11,340
65	295	19,175	94	6,110	54	3,510	26	1,690	44	2,860
60	526	31,560	71	4,260	33	1,980	9	540	30	1,800
55	256	14,080	15	825	4	220	1	55	13	715
50	457	22,850	14	700	5	250	3	150	4	200
45	158	7,110	1	45	2	90	1	45	3	135

40	148	5,920	....	....	....	....	3	120	4	160
35	33	1,155	1	35	1	35	....	....	3	105
30	34	1,020	11	330	1	30	2	60	3	90
25	10	250	3	75	....	....	4	100	3	75
20	8	160	....	....	3	60	3	60	2	40
15	3	45	1	15	....	....	....	....	1	15
10	4	40	....	....	1	10	2	20	2	20
5	....	....	....	....	4	20	....	....	....	....
2	....	....	....	....	3	6	....	....	....	....
Totals	2,127	117,170	378	24,360	297	19,781	477	34,680	1,466	110,665

Statement—(*Continued*).

TONS.	1848.		1849.		1850.		1851.		1852.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
300	....	....	....	....	....	....	....	....	....	....
250	....	....	....	....	....	....	....	....	....	....
240	....	....	....	....	....	....	....	....	....	....
230	....	....	....	....	....	....	....	....	....	....
225	....	....	....	....	....	....	....	....	....	....
220	....	....	....	....	....	....	....	....	....	....
210	....	....	....	....	....	....	....	....	....	....
200	....	....	....	....	....	....	....	....	....	....
195	....	....	....	....	....	....	....	....	....	....
190	....	....	....	....	....	....	....	....	....	....
180	....	....	....	....	....	....	....	....	....	....
175	....	....	....	....	....	....	....	....	....	....
170	....	....	....	....	....	....	1	170	....	....
160	....	....	....	....	....	....	....	....	....	....
150	....	....	....	....	2	300	....	....	1	150
145	....	....	....	....	....	....	....	....	....	....
140	....	....	....	....	....	....	....	....	....	....
135	....	....	....	....	....	....	....	....	....	....
130	....	....	1	130	....	....	1	130	2	260
125	....	....	....	....	....	....	1	125	....	....
120	....	....	1	120	....	....	2	240	....	....
115	....	....	....	....	....	....	....	....	....	....
110	....	....	....	....	....	....	....	....	....	....
105	....	....	....	....	....	....	....	....	....	....
100	....	....	2	200	13	1,300	27	2,700	84	8,400
95	....	....	4	380	6	570	23	2,185	63	5,985
90	10	900	4	360	25	2,250	72	6,480	90	8,100
85	20	1,785	13	1,105	16	1,360	11	935	22	1,870
80	148	11,840	78	6,240	38	3,040	28	2,240	26	2,080
75	158	11,850	75	5,625	17	1,275	22	1,650	10	750
70	59	4,130	20	1,400	20	1,400	18	1,260	9	630
65	13	845	2	130	4	260	1	65	4	260
60	25	1,500	7	420	3	180	2	120	2	120
55	8	440	....	....	....	....	....	....	....	....
50	2	100	2	100	4	200	1	50	6	300
45	4	180	....	....	....	....	1	45	....	....

40	1	40	....	....	3	120	1	40	....	....
35	....	....	....	....	....	....	1	35	....	....
30	6	180	4	120	....	....	....	....	....	....
25	....	....	....	....	....	....	....	....	....	....
20	....	....	2	40	....	....	....	....	....	....
15	1	15	....	....	....	....	....	....	....	....
10	1	10	....	....	....	....	....	....	2	20
5	....	....	....	....	1	5	....	....	....	....
2	....	....	....	....	....	....	....	....	....	....
Totals..............	457	33,765	215	16,370	152	12,960	218	18,470	271	23,925

Statement—(Continued).

TONS.	1853.		1854.		1855.		1856.		1857.		1858.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
300	....	....	....	....	....	....	....	....	....	....	....	....
280	....	....	....	....	....	....	....	....	....	....	....	....
250	3	750	2	500	....	....	1	250	1	250	1	250
240	1	740	....	....	1	240	2	480	....	....	....	....
230	....	....	....	....	....	....	....	....	....	....	....	....
225	....	....	....	....	....	....	....	....	....	....	....	....
220	1	220	1	200	....	....	....	....	....	....	....	....
210	....	....	....	....	....	....	....	....	....	....	....	....
200	5	1,000	3	600	4	800	....	....	3	600	3	600
195	....	....	....	....	....	....	....	....	....	....	....	....
190	....	....	....	....	....	....	....	....	....	....	....	....
180	....	....	....	....	....	....	4	720	....	....	7	1,260
175	....	....	....	....	....	....	....	....	....	....	....	....
170	....	....	1	170	....	....	....	....	....	....	15	2,250
160	....	....	....	....	....	....	....	....	....	....	....	....
150	6	900	13	1,950	2	300	2	300	51	7,650	46	6,900
145	....	....	....	....	....	....	....	....	....	....	....	....
140	....	....	....	....	....	....	4	560	15	2,100	5	700
135	....	....	....	....	....	....	5	675	2	270	....	....
130	7	910	9	1,170	43	5,590	22	2,860	16	2,080	4	520
125	18	2,250	105	13,125	18	2,250	14	1,750	21	2,625	15	1,875
120	16	1,920	143	17,160	125	15,000	118	14,160	84	10,080	13	1,560
118	10	1,150	34	3,910	17	1,955	13	1,495	4	460	....	....
115	....	....	....	....	....	....	....	....	....	....	....	....
110	16	1,760	87	9,570	13	1,430	10	1,100	6	660	3	330
105	....	....	....	....	....	....	1	105	2	210	....	....
100	79	7,900	83	8,300	28	2,800	28	2,800	8	800	25	2,500
95	180	17,100	69	6,555	40	3,800	38	3,610	18	1,710	15	1,425
90	164	14,760	95	8,550	58	5,220	69	6,210	43	3,870	16	1,440
85	22	1,870	20	1,700	16	1,360	3	255	16	1,360	5	425
80	33	2,640	44	3,520	28	2,240	6	480	15	1,200	22	1,760
75	15	1,125	32	2,400	43	3,225	17	1,275	14	1,050	14	1,050
70	6	420	10	700	23	1,610	4	280	3	210	7	490
65	3	195	1	65	2	130	....	....	1	55	3	195
60	2	120	2	120	4	240	....	....	3	180	18	1,080
55	....	....	....	....	....	....	....	....	....	....	....	....
50	3	150	1	50	3	150	1	50	....	....	7	350
45	....	....	1	45	....	....	....	....	....	....	1	45
40	....	....	1	40	....	....	1	40	1	40	3	125
35	....	....	....	....	....	....	....	....	....	....	....	....
30	....	....	....	....	....	....	....	....	1	30	....	....

25	....	....	1	25	1	25	....	....	....	....	3	75
20	....	....	....	....	1	20	1	20	....	....	....	....
15	....	....	2	30	1	15	1	15	....	....	1	15
10	....	....	....	....	....	....	1	10	1	10	1	10
5	....	....	....	....	....	....	....	....	....	....	1	5
2	....	....	....	....	....	....	....	....	....	....	....	....
Total	590	57,880	780	80,475	471	48,400	366	39,500	339	27,516	254	27,580

Statement—(*Continued*).

TONS.	1859.		1860.		1861.		1862.		1863.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
300	......	....	......	....	1	300	......	....	......	....
280	......	....	......	....	......	....	2	560	......	....
250	2	500	2	500	15	3,750	3	750	......	....
240	......	....	......	....	5	1,200	1	240	......	....
230	......	....	......	....	2	460	2	460	3	690
225	......	....	......	....	12	2,700	28	6,300	2	450
220	......	....	3	660	41	9,020	87	19,140	69	15,180
210	......	....	......	....	5	1,050	16	3,360	......	....
200	4	800	33	6,600	169	33,800	298	59,600	254	50,800
195	......	....	......	....	1	195	2	390	......	....
190	......	....	......	....	16	3,040	6	1,140	25	4,750
180	12	2,160	60	10,800	36	6,480	11	1,980	70	12,600
175	......	....	......	....	5	875	22	3,850	......	....
170	7	1,190	17	2,890	3	510	......	....	8	1,360
160	......	....	......	....	1	160	4	640	9	1,440
150	11	1,650	14	2,100	27	4,050	88	13,200	24	3,600
145	......	....	......	....	1	145	......	....	......	....
140	1	140	2	280	19	2,660	13	1,820	14	1,960
135	......	....	2	270	1	135	2	270	......	....
130	2	260	2	260	3	390	4	520	16	2,080
125	1	125	5	625	8	1,000	1	125	3	375
120	9	1,080	22	2,640	15	1,800	12	1,440	15	1,800
118	......	....	......	....	......	....	7	826	......	....
115	......	....	5	575	......	....	4	460	3	345
110	1	110	4	440	5	550	5	550	5	550
105	2	210	......	....	1	105	......	....	......	....
100	14	1,400	55	5,500	67	6,700	194	19,400	61	6,100
95	5	475	13	1,235	19	1,805	21	1,995	14	1,330
90	36	3,240	42	3,780	41	3,690	51	4,590	102	9,180
85	8	680	35	2,975	25	2,125	1	85	8	680
80	25	2,000	49	3,920	43	3,440	4	320	18	1,440
75	21	1,575	19	1,425	10	750	2	150	7	520
70	16	1,120	4	280	5	350	1	70	10	700
65	4	260	3	195	2	130	......	....	......	....
60	8	480	2	120	6	360	......	....	6	360
55	10	550	......	....	......	....	......	....	......	....
50	1	50	2	100	2	100	2	100	5	250
45	3	135	2	45	......	....	1	45	6	270

40			1	40	1	40				
35			1	35			1	35		
30							1	30	9	270
25					1	25	3	75		
20			2	40	1	20	1	20	4	80
15	1	15								
10	1	10	2	20						
5	1	5	1	5			2	10	1	5
2										
Total	206	20,220	403	48,355	615	93,910	902	144,466	771	119,170

N. B.—An allowance must, of course, be made of such boats as have gone out of use.

Accurate accounts were made of the number of boats on the 1st of January, in the years 1847, 1853 and 1859, and resulted as follows:

January 1, 1847, whole number of boats	2,275
January 1, 1853, do do	3,401
January 1, 1859, do do	3,867

STATEMENT of the number, class and tonnage of boats built and registered in 1864.

TONNAGE.	Steam.	D. bow.	Scows.	Decked scows.	Lake.	Bull heads.	Line.	Total boats.	Total tons.
300									
280									
250									
240			1					1	240
230				1	2			3	690
225			4	1	6			11	2,475
220			5	1	21	3		30	6,600
200	1		25	7	55	10		98	19,600
190						3		3	570
180			4		3			7	1,260
170									
160			1		1			2	320
150			8	4	10	2		24	3,600
140			1	3	11			15	2,100
130				1	2			3	390
125				3	1	1		5	625
120			1	2	3			6	720
115			1	1	2			4	460
110				2				2	220
100			1	23	10	4		38	3,800
95			1	29	3	5		38	3,610
90			4	32	8	22		66	5,940
85				1	2	1		4	340
80			1	11	5	2		19	1,520
75				1				1	75
70	1			6				7	490
60	1		3		2			6	360
50				1				1	50
45	1			1	1			3	135
30									
25	1							1	25
20	1							1	20
Total	6		61	131	148	53		399	56,235

STATEMENT of the number, class and tonnage of boats built and registered in 1865.

TONNAGE.	Steam.	D. bow.	Scows.	Decked scows.	Lake.	Bull heads.	Line.	Total boats.	Total tons.
300									
280									
250					4			4	1,000
240					3			3	720
230			1		3			4	920
225					3	1		4	900
220			5	2	11	1		19	4,180
200		1	3	7	30	4		45	9,000
190									
180		1	1		2			4	720
170					3			3	510
160									
150		1		2	5			8	1,200
140				1	2			3	420
130				1	1			2	260
125		1	1					2	250
120		4	1		1			6	720
115		2			2			4	460
110		3		2	1			6	660
100		1	1		3	6		11	1,100
95			1	3		1		5	475
90		18	5	1	5	8		37	3,330
85					1	1		2	170
80		4	1		3			8	640
75		2	3			1		6	450
70		5			1			6	420
60		2	1					3	180
50	1							1	50
45									
30		1						1	30
25									
20	1							1	20
5	1					1		2	10
Total	3	46	24	19	84	24		200	28,795

STATEMENT of the number, class and tonnage of boats built and registered in 1866.

TONNAGE.	Steam.	D. bow.	Scows.	Decked scows.	Lake.	Bull heads.	Line.	Total boats.	Total tons.
300									
280									
250					7	1		8	2,000
240			3	1	32	4		40	9,600
230		1	4		18	5		28	6,440
225			7	2	14	1		24	5,400
220			1	4	22	16		48	9,460
200			7	23	33	5		68	13,600
190									
180			1		3			4	720
170									
160	1				3			4	640
150			3	4	4			11	1,650
140			2	1	2			5	700
130			2	1	3	1		7	910
125			2	2				4	500
120			7	3	6	5		21	2,520
115		1	6	3	2			12	1,380
110			1			1		2	220
100		2	25	39	10	19		95	9,500
95		1	5	12		3		21	1,995
90		1	22	29	6	7		65	5,850
85				2				2	170
80			5	1				6	480
75			3	1				4	300
70			3	1				4	280
60		1	2	1				4	240
50		1						1	50
45									
30									
25									
20		1						1	20
5	1							1	5
Total	2	9	111	180	165	68		485	74,630

STATEMENT of the number, class and tonnage of boats built and registered in 1867.

TONNAGE.	M. bow.	D. bow.	Scows.	Decked scows.	Lake.	Bull heads.	Line.	Total boats.	Total tons.
300	....	....	....	....	....	....	....	....	....
280	....	....	....	....	....	....	....	....	....
250	....	....	....	1	....	1	....	2	1,000
240	....	....	....	1	33	13	....	47	11,280
230	....	....	2	3	31	6	....	42	9,660
225	....	....	2	9	31	5	....	29	6,525
220	....	....	....	3	21	5	....	47	10,340
200	....	....	6	13	33	4	....	56	11,200
190	....	....	....	3	2	....	....	5	950
180	....	....	....	....	....	....	....	....	....
170	....	....	....	....	....	....	....	....	....
160	....	....	....	....	....	....	....	....	....
150	....	....	2	7	2	1	....	12	1,800
140	....	....	....	....	1	6	....	7	980
130	....	....	4	3	12	1	....	20	2,600
125	....	....	1	....	2	1	....	4	500
120	....	....	4	5	7	....	....	16	1,920
115	....	....	....	....	....	....	....	....	....
110	....	....	....	....	....	....	....	....	....
100	29	17	26	11	15	16	....	114	11,400
95	....	....	....	....	....	....	....	....	....
90	36	5	10	9	11	12	....	83	7,470
85	....	....	....	....	....	....	....	....	....
80	....	5	5	4	2	6	....	22	1,760
75	....	....	3	1	2	1	....	7	525
70	....	....	3	....	1	....	....	4	280
60	....	....	2	....	....	....	....	2	120
50	1	....	....	....	....	....	....	1	50
45	....	....	....	....	....	....	....	....	....
30	....	....	....	....	....	....	....	....	....
25	....	....	....	....	....	....	....	....	....
20	....	....	....	....	....	....	....	....	....
5	....	....	....	....	....	....	....	....	....
Total	66	27	70	73	206	78	....	520	80,360

STATEMENT of the number, class and tonnage of boats built and registered in 1868.

TONNAGE.	M. bow.	D. bow.	Scows.	Decked scows.	Lake.	Bull heads.	Line.	Total boats.	Total tons.
300									
280									
250			1		2			3	750
240			2	2	40	5		49	11,750
230			11	3	41	6		61	14,030
225			13	3	26	2		44	9,900
220			4	6	15	2		27	5,940
200			6	15	9	2		32	6,400
190									
180									
170									
160					1	1		2	320
150		2			3	2		7	1,050
140				1	5	1		7	980
130			2		3			5	650
125					1	1		2	250
120			1	1	4			6	720
115									
110			1	1				2	220
100	5	5	7	1	5	17		40	4,000
95	2					5		7	665
90	2	3	7	4	4	7		27	2,430
85			1		1	1		3	255
80		1	1	2		3		7	560
75			1	1	1	1		4	300
70	19	4						23	1,610
60	19	1	1			2		23	1,380
50	4		1			1		6	300
45									
30									
25									
20									
5									
Total	51	10	60	40	161	59		387	64,470

RATES OF TOLL—1869.

ESTABLISHED BY THE CANAL BOARD ON PERSONS AND PROPERTY TRANSPORTED ON THE NEW YORK STATE CANALS, TO TAKE EFFECT ON THE OPENING OF NAVIGATION.

Toll is to be computed upon the Weight ("1000 *pounds per mile*") *of all articles contained in the following list, unless otherwise stated, opposite to the articles excepted.*

	cts.	m.	fr.
A.			
Acid sulphuric	0	2	0
Agricultural implements, going from tide-water	0	1	5
Articles not enumerated, going toward tide-water	0	3	0
On the same, going from tide-water	0	1	5
Agricultural productions of the United States, not particularly specified	0	3	0
Apples	0	2	0
Ashes, pot and pearl	0	2	0
Ashes, leached	0	0	5
B.			
Bacon	0	1	0
Barley	0	3	0
Barrels, empty, transported in boats	0	1	0
Barrels, empty, transported in rafts	0	5	0
Bars of iron	0	1	5
Barytes	0	1	5
Beans	0	3	0
Bedstead stuff (see *Lumber No.* 3)	0	2	3
Beef, salted	0	2	0
Bleaching powders, going from tide-water	0	1	0
Bloom iron	0	1	5
Boat knees (see *Lumber No.* 3)	0	2	3
Boats *used chiefly* for transportation of passengers upon *all canals*, per mile,	4	0	0
On same, if they elect to commute for tolls upon passengers	3	0	0
Boats *used chiefly* for transportation of property, per mile	2	0	0
On the same, if they elect to commute for tolls upon passengers	2	3	0
Boats registered before July 1st, 1862, whose bows do not conform to regulation No. 40, per mile	3	0	0
Bolts, stave, if carried in boats	0	1	5
Bolts, stave, if carried in rafts	0	5	0
Bones	0	1	0
Boxes, stuff for (see *Lumber No.* 3)	0	2	3
Bran	0	2	0
Brick	0	1	0
Brimstone	0	1	0
Broom handles (see *Lumber No.* 3)	0	2	3
Brush backs (see *Lumber No.* 3)	0	2	3
Brush handles (see *Lumber No.* 3)	0	2	3
Buffalo skins	0	3	0
Butter	0	2	0
Butts, stave, if carried in boats	0	1	5
Butts, stave, if carried in rafts	0	5	0
C.			
Cabinet ware	0	1	5
Carboys	0	2	0
Carts	0	2	0
Car axles	0	1	5

	cts.	m.	[illegible]
Car wheels (iron)	0	1	5
Carriages and sleighs	0	2	0
Casks, empty, transported in boats	0	1	0
Casks, empty, transported in rafts	0	5	0
Castings, all iron casting	0	1	5
Cattle alive	0	2	0
Cedar posts (see *Lumber No.* 2) per 1000 feet, per mile	0	6	5
Cedar, red (see *Lumber No.* 2) per 1000 feet per mile	0	6	5
Cement, fire proof	0	1	5
Chair stuff (see *Lumber No.* 3)	0	2	8
Charcoal	0	0	5
Cheese	0	2	0
Cider	0	2	0
Clay	0	1	0
Clover seed	0	4	0
Coal, mineral or anthracite	0	1	0
Coal, bituminous	0	1	0
Coal, bituminous, if cleared to tide water, and delivered at tide water, or Cohoes	0	0	5
Coal oil	0	1	0
Coal tar and products thereof	0	0	5
Coffee	0	1	0
Copper ore	0	1	0
Copper, pig and smelted	0	1	0
Corn	0	2	5
Corn meal	0	2	5
Cotton	0	1	0
Crockery	0	1	0

D.

Deer skins	0	8	0
Domestic distilled spirits	0	2	0
Domestic cottons	0	1	5
Domestic woolens	0	1	5

E.

Earth	0	0	5
Esculent roots	0	1	0

F.

Fellies (see *Lumber No.* 3)	0	2	8
Fire-proof cement	0	1	5
Fire brick	0	1	0
Fish, salted, going from tide water	0	1	0
Flax seed	0	2	0
Flour	0	8	0
Furniture, cabinet ware and chairs	0	1	5
Furniture for stoves, not cast iron	0	1	5
Furs, and skins of animals producing furs	0	8	0

G.

Gas pipes	0	1	5
Glass ware	0	1	5
Grass seed	0	4	0
Grease	0	1	5
Gunstocks (see *Lumber No.* 3)	0	2	8
Gypsum, ground and unground	0	1	0

H.

Hand spikes (see *Lumber No.* 3)	0	2	8
Hay, pressed	0	1	0
Heading, undressed, transported in boats	0	1	5
Heading, dressed or partly dressed	0	1	5
Heading, transported in rafts	0	5	0

	cts.	m.	fr.
Hemp going towards tide-water	0	1	0
Hides	0	1	5
Hogs alive	0	2	0
Hops	0	2	0
Hop poles (see *Lumber No.* 3)	0	2	3
Hop poles transported in rafts	0	5	0
Hoop poles (see *Lumber No.* 3)	0	2	3
Hoop poles transported in rafts	0	5	0
Hoops, rived	0	2	3
Horses	0	3	0
Horses, used exclusively for towing boats and other floats, exempt from toll.			
Horse shoes	0	1	5
Hobs (see *Lumber No.* 3)	0	2	3

I.

Ice	0	1	0
Iron in sheets, bars and bundles	0	1	5
Iron ore	0	1	0
*Iron ore, carried to any place within this State, and which has been brought on the Champlain canal to West Troy or Albany, and cleared from one of those points to some place within this State, on the Erie or some of the canals west	0	0	5
Iron, bloom and pig, going towards tide water	0	1	5
Iron, pig, going from tide water	0	1	0
Iron, boiler	0	1	5
Iron, bridge and railing	0	1	5
Iron bolts	0	1	5
Iron safes	0	1	5

J.

Junk	0	1	5

L.

Lard	0	1	5
Lard oil	0	1	5
Last blocks (see *Lumber No.* 3)	0	2	3
Lath (see *Lumber No.* 1)	0	2	3
Lath (see *Lumber No.* 2) per 1,000 feet, per mile, surface measure	0	6	5
Lath (see *Lumber No.* 3)	0	2	3
Lead, bar and pig, going towards tide water	0	0	5
Leather	0	1	5
Lime, manufactured	0	1	5
Lime, water, going from tide water	0	1	0
Lime, water, going towards tide water	0	1	5
Limestone	0	0	5
Looking glass backs (see *Lumber No.* 3)	0	2	3

LUMBER No. 1.†

Transported in boats by weight, per 1,000 pounds per mile:

White pine, white wood, cherry, bass wood, cedar boards, planks, scantling, and on all sidings, lath and other sawed stuff less than one inch thick, (except such as is enumerated in *Lumber No.* 3)	0	2	3
Oak, hickory, beech, sycamore, black walnut, butternut, maple, ash, elm, fir, tamarack, yew and spruce	0	1	8
Hemlock	0	1	0

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* In order to secure the transit of the ore at the reduced rate, the Collectors at West Troy or Albany, should certify upon the clearances that the whole cargo of iron ore mentioned in clearance has been brought on the Champlain Canal to the place where the clearance was granted.

† LUMBER shall not be cleared by measurement when carried in a boat having other articles on board paying toll by WEIGHT, but such lumber shall, in all such cases, be also cleared by weight.

When a cargo is composed entirely of lumber, which can be cleared by weight or measure the whole of such cargo shall be cleared by measurement or by weight, as the shipper or master may elect, and in no case shall a portion of any such cargo be cleared by measurement and the other portion by weight.

LUMBER No. 2.†

Transported in boats, by measurement, per 1,000 feet, per mile:

	cts.	m.	fr.
Boards, planks, scantling, railroad ties, and sawed timber, reduced to inch measure, and all siding, lath and other sawed stuff, less than one inch thick (except such as is enumerated in *Lumber No.* 3), tolls computed on surface measure; and all kinds of red cedar, cedar posts, estimated that a cord, after deducting for openings, will contain 1,000 feet	0	6	5
Hemlock, per 1,000 feet, per mile, when not weighed	0	3	0
Lumber No. 2, transported in rafts, per 1,000 feet, per mile	2	5	0

LUMBER No. 3.†

Transported in boats, by weight, per 1,000 pounds, per mile:

Sawed lath of less than 10 feet in length, split lath, hoop poles, hand spikes, rowing oars, broom handles, spokes, hubs, treenails, fellies, boat and ship knees, plane stocks, pickets for fences, railroad ties, last blocks, stuff—manufactured or partly manufactured—for boxes, chairs and bedsteads, hop poles, brush handles, brush backs, looking glass backs, gun stocks, plow beams and plow handles	0	2	3
Sawed stuff for window blinds not exceeding one-fourth of an inch in thickness	0	7	0

M.

Mahogany	0	1	5
Manure	0	1	0
Marl	0	1	0
Merchandise, non-enumerated	0	1	5
Molasses	0	1	0
Moose skins	0	3	0

N.

Nails	0	1	0

O.

Oats	0	2	5
Oil cake	0	2	0
Oil meal	0	2	0
Onions	0	1	0

P.

Passengers, over ten years of age, per mile	0	0	5
Petroleum or earth oil, crude and refined	0	0	5
Peas	0	3	0
Peat	0	1	0
Pickets for fences (see *Lumber No.* 3)	0	2	3
Pig copper	0	1	0
Pig iron, going from tide water	0	1	0
Pig iron, going towards tide water	0	1	5
Plane stocks (see *Lumber No.* 3)	0	2	3
Plaster, calcined, or plaster of paris, going from tide water	0	1	5
Plow beams (see *Lumber No.* 3)	0	2	3
Plow handles (see *Lumber No.* 3)	0	2	3
Pork, salted	0	2	0
Posts, split and round, not exceeding eight feet in length, carried in boats, per M, per mile	3	0	0
Potatoes	0	2	0
Powder and gunpowder	0	4	0

R.

Rags	0	1	5
Railroad chairs	0	1	5

	cts.	m.	fr.
Railroad iron	0	1	5
Railroad ties, see *Lumber No.* 2 *and* 3.			
Rails for fences, not exceeding fourteen feet in length, carried in boats, per M, per mile	3	0	0
On the same, if carried in rafts, per M, per mile	8	0	0
Rice, going from tide water	0	1	0
Roots, esculent	0	1	0
Rowing oars (see *Lumber No.* 3)	0	2	3
Rye	0	3	0
S.			
Sal soda, going from tide water	0	1	0
Salted fish, going from tide water	0	1	0
Salt, foreign	0	2	5
Salt, manufactured in this State	0	1	5
Sand	0	0	5
Sawed stuff, see *Lumber Nos.* 2 *and* 3.			
Sawdust	0	1	0
Scrap iron	0	1	5
Sheep, live	0	2	0
Shingles, in boats, per 1,000 pounds, per mile	0	1	5
Shingles, in boats, per M, per mile	0	0	5
Shingles, per M, per mile, in rafts	0	4	0
Ship knees	0	2	3
Ship knees, transported in rafts	0	5	0
Ship stuffs	0	2	0
Shooks, stave	0	1	5
Shrubbery and trees	0	4	0
Siding (see *Lumber No.* 1)	0	2	3
Siding (see *Lumber No.* 2) per 1,000 feet surface measure	0	6	5
Skins of animals producing furs	0	3	0
Slate	0	0	5
Sleighs	0	2	0
Soda ash	0	1	0
Spikes	0	1	0
Split posts and round, not exceeding eight feet in length, carried in boats, per M, per mile	3	0	0
On the same, if carried in rafts, per M, per mile	8	0	0
Spokes (see *Lumber No.* 3)	0	2	3
Staves and heading, sawed, cut and dressed or partly dressed, shooks and stave bolts and butts, not exceeding four feet and a half in length, transported in boats	0	1	5
On the same if transported in rafts	0	5	0
Steel	0	1	5
Stone for the manufacture of lime	0	1	0
Stone, wrought	0	1	0
Stone, unwrought and partly wrought	0	0	5
Stoves	0	1	5
Straw, pressed, and any pressed vegetable substance used for the manufacture of paper or paper pulp	0	1	0
Sugar	0	1	0
T			
Tallow	0	1	5
Tan bark, per cord, per mile, carried in boats	0	5	0
Tan bark, per cord, per mile, carried in rafts	2	0	0
Tan bark, ground, per 1,000 pounds, per mile	0	2	5
Tar	0	1	5
TIMBER, per 100 cubic feet, per mile, transported in boats:			
Squared and round, other than hemlock	0	6	0
Squared and round, hemlock	0	4	0
Squared and round (all kinds), transported in rafts	1	0	0
Squared and round, transported in rafts, cleared after the 1st day of September next	2	0	0
Sawed timber (see *Lumber No.* 2) per 1000 feet, per mile	0	6	5

	cts.	m.	fr.
Tin plate, going from tide water	0	1	0
Tobacco, unmanufactured, going towards tide water	0	1	0
Tobacco, going from tide water	0	1	5
Treenails (see *Lumber No.* 3)	0	2	3
Trees and shrubbery	0	4	0
Turnips	0	1	0
Turpentine	0	1	5
V.			
Varnish	0	1	5
Vinegar	0	1	5
W.			
Wagons	0	2	0
Water lime, going from tide water	0	1	0
Water lime, going towards tide water	0	1	5
Water pipes	0	1	5
Wheat	0	8	0
Window blinds, sawed stuff for (see *Lumber No.* 3)	0	5	0
Window sashes	0	5	0
Wood for fuel, per cord, per mile	0	5	0
Wood for fuel, per cord, per mile, carried in rafts	0	2	0
Wood, used in the manufacture of salt, per cord, per mile	0	5	0
Wool	0	1	0

ARTICLES PAYING ONE-HALF MILL PER 1,000 POUNDS PER MILE.

Ashes, leached; charcoal; coal, bituminous, if cleared at tide-water, and delivered at tide-water or Cohoes; coal tar, and products thereof; earth; *iron ore carried to any place within this State, and which has been brought on the Champlain canal to West Troy or Albany, and cleared from one of those points to some place within this State on the Erie or some of the canals west; lead, bar and pig, going toward tide-water; limestone, and stone for the manufacture of lime; petroleum, crude and refined; sand; slate; stone, unwrought and partly wrought.

ARTICLES PAYING ONE MILL PER 1,000 POUNDS PER MILE.

Bacon; barrels, empty, transported in boats; bleaching powders, going from tide-water; bones; brick; brimstone; casks, empty, transported in boats; clay; coal, anthracite; coal, bituminous, going from or cleared short of tide-water; coal oil; coffee; copper ore; copper, pig and smelted; cotton; crockery; esculent roots; fire brick; fish, salted, and going from tide; gypsum, ground and unground; hay, pressed; hemp, going toward tide; ice; iron ore; iron, pig, going from tide-water; manure; marl; molasses; nails; onions; peat; rice, going from tide-water; sal soda, going from tide-water; saw dust; soda ash; spikes; stone, wrought; straw, pressed; sugar; tin plate, going from tide; tobacco, unmanufactured, going toward tide-water; turnips; water lime, going from tide-water; wool.

ARTICLES PAYING ONE AND ONE-HALF MILLS PER 1,000 POUNDS PER MILE.

Agricultural implements, going from tide-water; articles not enumerated, going from tide-water; barytes; bloom iron; cabinet ware; car axles; car wheels, iron; castings of all kinds; cement, fire proof; domestic cottons; domestic woolens: furniture, cabinet ware, &c.; furniture for stoves; gas pipes; glass ware; grease; heading, transported in boats; hides; horse shoes; iron, in sheets, bars and bundles;

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* In order to secure the transit of the ore at the reduced rate, the collector at West Troy or Albany should certify upon the clearances that the whole cargo of iron ore mentioned in clearance has been brought on the Champlain canal to the place where the clearance was granted.

iron, pig, going toward tide; iron, boiler; iron, bridge and railing; iron bolts; iron safes; junk; lard; lard oil; leather; lime; mahogany; merchandise not enumerated; pig iron, going toward tide; plaster, calcined or plaster paris, going toward tide; rags; railroad chairs; railroad iron; salt, manufactured in this State; scrap iron; shingles, transported in boats; shooks, stave; staves and heading, sawed, cut and dressed, or partly dressed, shooks and stave bolts and butts, not exceeding four feet and a half in length, transported in boats; steel; stoves; tallow; tar; tobacco, going from tide-water; turpentine; varnish; vinegar; water lime, going toward tide; water pipes.

ARTICLES PAYING TWO MILLS PER 1,000 POUNDS PER MILE.

Acid, sulphuric; apples; ashes, pot and pearl; beef, salted; bran; butter; carboys; carts; carriages; cattle, alive; cheese; cider; domestic distilled spirits; flax seed; hogs, alive; hops; oil cake; oil meal; pork, salted; potatoes; sheep, alive; ship stuff; sleighs; wagons.

ARTICLES PAYING TWO AND ONE-HALF MILLS PER 1,000 POUNDS PER MILE.

Corn; corn meal; oats; salt, foreign; tan bark, ground.

ARTICLES PAYING THREE MILLS PER 1,000 POUNDS PER MILE.

Articles not enumerated, going toward tide-water; agricultural productions of the United States, not particularly specified; barley; beans; buffalo skins; deer skins; flour; furs and skins of animals producing furs; horses; moose skins; peas; rye; skins of animals producing furs; wheat.

ARTICLES PAYING FOUR MILLS PER 1,000 POUNDS PER MILE.

Clover seed; grass seed; powder and gun powder; shrubbery; trees.

ARTICLES PAYING FIVE MILLS PER 1,000 POUNDS PER MILE.

Barrels, empty, transported in rafts; bolts, stave, transported in rafts; butts, stave, transported in rafts; casks, empty, transported in rafts; heading, transported in rafts; hop poles, transported in rafts; hoop poles; ship knees, transported in rafts; staves and heading, not exceeding four feet and a half in length, transported in rafts; window blinds, sawed stuff for; window sashes.

LUMBER, SHINGLES AND TIMBER.

LUMBER No. 1.*

Transported in boats by weight, per 1,000 pounds, per mile:

	cts.	m.	fr.
White pine, white wood, cherry, bass wood, cedar boards, planks, scantling, and on all sidings, lath and other sawed stuff less than one inch thick (except such as is enumerated in *Lumber No.* 3)	0	2	3
Oak, hickory, beech, sycamore, black walnut, butternut, maple, ash, elm, fir, tamarack, yew and spruce	0	1	8
Hemlock	0	1	0

LUMBER No. 2.*

Transported in boats by measurement, per 1,000 feet, per mile:

Boards, planks, scantling, railroad ties, and sawed timber reduced to inch measure, and all siding, lath and other sawed stuff, less than one inch thick (except such as is enumerated in *Lumber No.* 3), tolls computed on surface measure; and all kinds of red cedar, cedar posts, estimating that a cord, after deducting for openings, will contain 1,000 feet	0	6	5
Hemlock, per 1,000 feet, per mile, when not weighed	0	3	0
Lumber No. 2, transported in rafts, per 1,000 feet, per mile	2	5	0

LUMBER No. 3.*

Transported in boats by weight, per 1,000 pounds, per mile:

	cts.	m.	fr.
Sawed lath of less than 10 feet in length, split lath, rived hoops, hoop poles, hand spikes, rowing oars, broom handles, spokes, hubs, treenails, fellies, boat and ship knees, plane stocks, pickets for fences, railroad ties, last blocks, stuff, manufactured or partly manufactured, for boxes, chairs and bedsteads, hop poles, brush handles, brush backs, looking-glass backs, gun stocks, plow beams and plow handles	0	2	3
Sawed stuff for window blinds not exceeding one-fourth of an inch in thickness	0	5	0
TIMBER per 100 cubic feet, per mile, transported in boats:			
Square and round, other than hemlock	0	6	0
Square and round, hemlock	0	4	0
Square and round (all kinds), transported in rafts	1	0	0
Square and round, transported in rafts, cleared after the first day of September next	2	0	0
Sawed timber (see *Lumber No.* 2), per 1,000 feet, per mile	0	6	5
SHINGLES in boats, per 1,000 pounds, per mile	0	1	5
do in boats, per M, per mile	0	0	5
do in rafts, per M, per mile	0	4	0
Posts, split and round, and rails for fences, not exceeding fourteen feet in length, carried in boats, per M, per mile	3	0	0
On the same, if carried in rafts, per M, per mile	8	0	0

ARTICLES PAYING TOLL BY THE CORD.

	cts.	m.	fr.
Tan bark, per cord, per mile, carried in boats	0	5	0
Tan bark, per cord, per mile, carried in rafts	2	0	0
Wood for fuel, per cord, per mile, carried in boats	0	5	0
Wood for fuel, per cord, per mile, carried in rafts	2	0	0

BOATS AND PASSENGERS.

	cts.	m.	fr.
On boats *used chiefly* for the transportation of passengers, upon *all canals*, per mile	4	0	0
On the same, if they elect to commute for tolls upon passengers	3	0	0
On boats *used chiefly* for the transportation of property, per mile	2	0	0
On the same, if they elect to commute for tolls upon passengers	2	3	0
On boats registered before July 1st, 1862, whose bows do not conform to regulation No. 40, per mile	3	0	0
On all persons over ten years of age per mile	0	0	5

REGULATIONS RELATIVE TO LUMBER.

The collectors of canal tolls at Rochester, Syracuse and Utica, where a boat having on board sawed lumber or cord wood, which has been cleared, either by count, measurement or *weight*, is unloaded at either of said offices, and the collectors of canal tolls at Waterford, West Troy and Albany, in every instance where a boat having on board sawed lumber or cord wood, shall pass into the Hudson river, or where the cargo is unloaded at either of said offices, which has not been measured or counted by either of them, shall require the master or owner to produce the certificate of a city inspector or measurer before a new clearance is granted to said boat, stating the count or measurement of the quantity of each kind of lumber in feet, and the number of cords of wood of which said cargo was composed; and every such inspector or measurer may give his certificate upon his own personal inspection of the count or measurement; or he may give his certificate upon the written statement of the owner or consignee of said wood or lumber, which statement shall, in all cases, be accompanied with an affidavit of the measurement or count from a person of good character, and a competent measurer of lumber or wood, in the following form, viz.:

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* LUMBER shall not be cleared by measurement when carried in a boat having other articles on board paying toll by WEIGHT, but such lumber shall, in all such cases, be also cleared by weight.

When a cargo is composed entirely of lumber, which can be cleared by weight or measure the whole of such cargo shall be cleared by measurement or by weight, as the shipper or master may elect, and in no case shall a portion of any such cargo be cleared by measurement and the other portion by weight.

I,———of———, do swear that I have measured the entire cargo of the boat——— of———, of which———is master, and that the following is a true statement or bill of the number of pieces, and the quantity in board measure, where the pieces were not less than one inch thick, and the number of pieces and the quantity in surface measure, where the pieces were less than one inch thick of each kind of lumber comprising said cargo, viz.:

[Here give the quantity of *each kind* of lumber in feet.]

And I do further swear, that where the ——— were not of uniform length or width, I measured each piece, and have given the true contents of the whole, having made no deduction for defective lumber.

Sworn before me this
day of , 186 .

And the collector may also require the master of the boat to add his oath to the certificate of the lumber inspector, as follows:

I, A. B., master of the boat ———, of ———, do swear, that no part of the lumber embraced in the bill of lading and clearance was taken from said boat, from the time said clearance and bill of lading were given to me, until the same was unloaded at ———, on the ——— day of ———, 186 .

[If lumber has been previously unloaded from same cargo, state the *kind*, quantity, and place of unloading.]

Sworn before me, this
day of , 186 .

And the certificate of the said city inspector shall certify on what evidence his certificate is given, and such certificate and evidence shall be carefully preserved in the collector's office; and in every instance where, in the opinion of the collector, this certificate cannot be furnished, or where he shall have any doubts that such certificate includes the whole amount of said cargo, he shall administer an oath to the master or owner of the boat, in relation to the correctness of his clearance.

The bill of lading of each boat loaded with lumber, and *destined to New York*, must be verified in the following manner, to entitle such boat to a clearance, viz.:

1. Where the master does not superintend the loading of the boat, the shipper, or some person who has such superintendence, must swear to the correctness of the bill of lading, as follows:

I, ———, of the town of ———, do swear that I superintended the loading of the boat ——— of ———, of which ——— is master, at ———, and that the above is a true bill of lading of said boat, and gives the number of feet in board measure, where the boards are not less than one inch thick, and the number of feet in surface measure, where the boards are less than one inch thick; and that no articles of freight of any kind, other than those specified in said bill, were put on board of said boat up to the time that ——— took charge of the boat as master.

Sworn before me this
day of , 186 .

The master of the boat will be required to make the following oath:

I, A. B., master of the boat ———, of ———, do swear, that no addition has been made to the cargo of said boat since the bill of lading and affidavit annexed were delivered to me, and according to the best of my knowledge and belief, the said bill represents truly all the freight on board of said boat.

Sworn before me, this }
day of , 186 . }

2. Where the master superintends the loading of the boat, the bill of lading may be signed by the shipper, and be verified by the oath of the master, as follows:

I, ——, master of the boat ——, of ——, do swear that I superintended the loading of the boat ——, of ——, at ——, and that the above is a true bill of lading of said boat, and gives the number of feet in board measure, where the boards are not less than one inch thick, and the number of feet in surface measure, where the boards are less than one inch thick, and that on articles of freight of any kind are on board of said boat, other than those specified in the bill of lading now presented to obtain a clearance.

Sworn before me, this }
day of , 186 . }

Each boat destined to New York shall be furnished with a duplicate of its bill of lading, which must be left with the collector at the place where it enters the Hudson river.

In the measurement of timber to be floated on the canals, bark adhering to the wood and refuse stuff are to be estimated as forming part of the timber, and to be rated accordingly; and the inspectors are instructed to make their measurements according to these directions.

Whenever cord wood or sawed lumber shall be delivered to more than one owner or consignee, from the same cargo, the master of such boat shall deliver to a canal boat inspector, a statement from each owner or consignee of the quantity in feet of each kind of lumber, and the number of cords of wood received by him from such cargo, and such statement shall be accompanied by an affidavit such as is first above prescribed, omitting the words "entire cargo," and substituting therefor "all of that portion of said cargo delivered to (here insert the owner or consignee's name)," and every master who shall violate the provisions of this regulation, shall forfeit the sum of ten dollars.

Whenever a cargo of cord wood or sawed lumber, or any portion thereof, is unloaded at a place where there is no collector, the master of said boat shall attend to the measurement of said lumber or wood when it is delivered, and it shall be the duty of said master to deliver to the nearest collector, or the collector next in order on his passage, a statement showing the kind or kinds and quantity of all the lumber in feet, and the number of all the cords of wood so unloaded, which statement shall be sworn to before the collector to whom it is delivered; and every master who shall violate the provisions of this regulation shall forfeit the sum of ten dollars.

INFORMATION NECESSARY FOR THOSE WHO NAVIGATE THE CANALS.

Bill of Lading.

Every master of a boat conveying property on a canal, shall exhibit to the several collectors, hereafter mentioned, a just and true account or bill of lading of such property, signed by himself and by the consignor thereof, containing:

1. The name of each place on the canal where any portion of such property was shipped, and of the place for which it is intended to be cleared.

2. A statement of the names, description and weight of all the articles of such

property on which toll is charged by the ton, of the number of articles on which toll is charged by the number, and of the feet of each article on which toll is charged by the foot.

3. A specification of the weight or quantity of each article, where a different rate of toll is charged on different articles, on which toll is so computed.

4. No clearance of a boat and cargo shall be granted or issued by any collector of canal tolls, except upon the production to him of a Bill of Lading containing the above particulars.

If on the passage, other articles are taken on board, the master must enter the number or weight of such articles on the bill.

☞ Property taken on within one mile of a collector's office, must pay toll at, and be cleared from that office.

☞ Every master should know the contents of his cargo, so that he can, if required, verify his bill of lading by his oath.

☞ Masters who transport lumber by the pound or foot, or wood by the cord, if they take the estimate of the owner, should require him to give a bill signed by himself, and for the accuracy of which he is willing to be responsible; otherwise the master or his boat, being responsible for the treble toll to the State, may be without remedy against the person who makes the erroneous shipping bill. [For the penalties for false bills, see 1 R. S., 1st Ed., sections 123, 124 and 125.]

CLEARANCE.

Every boat must have a clearance, and no boat can proceed beyond the place cleared to, or unlade any article before or after its arrival there, until the clearance is delivered to the collector. If there be no collector there, the clearance is to be left with the last collector. For neglecting to deliver the clearance, the fine is ten dollars. The master can have a certified copy for sixpence, if not over 200 words, counting each figure as a word; if over 200 words, for one shilling and no more in any case. Copies of clearances to get toll refunded, where a collector makes a mistake, are to be furnished without charge; property transferred from one boat to another must in all cases be recleared. A boat or float whose clearance is lost, or is claimed to be lost, must be detained until it reclear and pay the toll for the whole voyage; or produce a duplicate clearance from the office where its first clearance is claimed to have been issued. If the master or owner elects to reclear, no toll will be refunded in consequence of having paid the toll a second time, unless the original clearance is produced.

RAFTS.

Every raft navigating at night must carry a conspicuous light on the forward end of the same, and every raft moored or tied up, is, at all times during the night, to have a conspicuous light at each end of each tow, near the outer corners thereof. Penalty for each offense, ten dollars.

WEIGH LOCK.

Light Weight.—A new boat must get its light weight within thirty days after its first clearance, or be subject to a penalty of five dollars at each weigh-lock. After a new boat gets its light weight, it may continue to run, not to exceed four years, without getting another light weight, and without incurring a penalty for the omission to do so, unless it be ordered again to weigh light; or where the weight of a boat has been *lessened* since a light weight was obtained.

RELATIVE TO REFUNDING.

More by Lock.—If a master be dissatisfied with an addition by one weigh lock, he should go into another; if the second lock differs from the first, and he is still dissatisfied, he may, if he chooses, go into a third, if there be one. If he passes the *third without weighing*, nothing will be refunded on account of the addition by the *first*. If he weighs in the third, the average of the locks will determine whether he shall have toll refunded or pay more.

Less by Lock.—Although a weigh lock may show a cargo to weigh less than the bill of lading, before toll will be refunded on the difference, the master must prove what *particular article*, and *how much of it*, is entered wrong on his bill, and that every other article is entered right. The cargo must be weighed in at least two weigh locks.

Toll will not be refunded on an addition made by a weigh lock, in consequence of using the light weight of a previous year, except in case of an addition made to a cargo under the first clearance for the season, and then only when such first clearance shall have been taken at a place where there is *no weigh lock*.

ADDITION TO BOAT.

Before toll will be refunded in consequence of an increase in the weight of a boat, by an addition made to it after a light weight has been obtained, a *new light weight* must be taken. Affidavits in relation to any increase to the weight of a boat, without such new light weight, will not be received. Toll will only be refunded on the first cargo after such increase in the weight of a boat was made.

BOAT AND CARGO STOPPED SHORT OF POINT CLEARED TO.

Any collector will refund in a case where a boat for any reason cannot proceed, on the delivery of the original clearance, and the affidavit of the master that he paid the toll on the boat and cargo, and that he is the owner of the boat, or runs the same on his own account, or that he is authorized by the person or persons who did pay it (which authority shall be in writing, signed by such person or persons, and deposited with the collector) to receive and receipt for the same.

MIXED CARGO.

Any addition by weigh lock to a mixed cargo will be upon articles subject to the *highest rate of toll*, and going the *farthest distance*, unless the master furnishes the collector *proof* of the specific article which caused the addition.

NEW BOATS.

The owner of every NEW BOAT must file with a collector a "certificate of registry," containing the name or names of the owners, their place of abode, the name of the boat, and its hailing place; also stating the tonnage of the boat, and whether it be a steamer, packet, line, lake, bull head, open scow, or decked scow. If the owners reside out of the State, it is to be signed by the master. If the master of a boat owned out of the State be changed, the new master must file another certificate. No boat registered since the first day of July, 1862, whose bow does not conform to the 40th Regulation of the Canal Board, will be allowed, under any circumstances, to navigate the canals of the State.

NAME OF BOAT.

The name of the boat, with the hailing place, as it is registered, must be PAINTED in letters at least four inches in height, on some CONSPICUOUS and PERMANENT part of the OUTSIDE of the boat. No boat will hereafter be permitted to change its name or its hailing place; and for painting a new name or hailing place, which is considered a part of the name, or for reporting a boat by a name different from the registered name, to any collector, the penalty is ten dollars.

When a person sells a boat, unless he requires the purchaser to file a certificate of "change of ownership" with a collector, he is still deemed in law the owner, and is liable for tolls and fines.

INJURING OR OBSTRUCTING THE CANALS—PENALTIES THEREFOR.

For using a setting pole pointed with iron or other metal; for obstructing the canal by mooring a float, sinking a vessel, timber, stone, &c.; and for omitting to have a knife on the stem of the boat, there is, in the first case, a penalty of five dollars, and in the other two of ten dollars each.

DEDUCTION FOR WATER.

No greater deduction shall be made from the weight of any boat and cargo, on account of *water in the boat*, by any weigh master weighing a loaded boat, than the amount of the water *credited and registered* to said boat when *last weighed light.*

BOATS AT NEW YORK AND BUFFALO.

Masters of boats going to New York must, on their return, produce to the collector where the boat enters the canal from the Hudson river full and satisfactory evidence of the correctness of the clearance and bill of lading of the down cargo, and that the full tolls have been paid thereon. If this be not done the return clearance must be refused in all cases; and such boats as do not clear at Buffalo must bring back the certificate of the canal collector in Buffalo as to the correctness of the up cargo, or the collector at Tonawanda will not clear them.

HEIGHT OF BOATS ALLOWED ON THE ERIE, OSWEGO, AND CAYUGA AND SENECA CANALS.

No boat or other craft whose height or distance from the water line of such boat or craft to the top thereof shall exceed eleven feet and three inches; and no loaded boat or other craft whose cargo, or any part thereof, is so arranged or placed on such boat or craft, so that the top or extreme height of the same shall exceed eleven feet and three inches from the water line of such ladened boat or craft; and no steamboat, tug or other craft propelled by steam, whose height when the top of the deck, machinery, fixtures, or other apparatus, shall exceed eleven feet and three inches, shall be allowed or permitted to navigate either of the above named canals.

HEIGHT OF BOATS ALLOWED ON THE CHEMUNG CANAL.

No boat or other craft whose height or distance from the water line of such boat or craft, to the top thereof, shall exceed nine feet; and no loaded boat or other craft, whose cargo, or any part thereof, is so arranged or placed on such boat or craft, so that the top, or extreme height of the same shall exceed nine feet from the water line of such ladened boat or craft; and no steamboat, tug, or other craft propelled by steam, whose height when the top of the deck, machinery, fixtures, or other apparatus, shall exceed nine feet, shall be allowed or permitted to navigate the Chemung canal.

OVERDRAFT OF WATER.

No boat drawing more water than the limit prescribed by the Canal Board shall be cleared by any collector; and it shall be the duty of every *collector*, *superintendent*, *inspector and weigh master*, to cause *every boat* found violating the regulations on this subject to be so far unloaded as to bring her within the prescribed limit, and in every case where a boat is so unloaded, the fact shall be entered on her clearance, with a statement of the portion of her cargo taken off; and if such boat shall be found to exceed the said draft, her master or owner *shall be subject to a penalty of twenty-five dollars*, to be imposed and collected by any and *every* collector, superintendent, inspector and weigh master, who shall at different times and places detect such overdraft.

COMMISSIONERS OF THE CANAL FUND.

[The Commissioners of the Canal Fund have the superintendence of the Canal Fund, and of the Canal Debt.]

Allen C. Beach, Lieutenant-Governor; Homer A. Nelson, Secretary of State; William F. Allen, Comptroller; Wheeler H. Bristol, Treasurer; Marshall B. Champlain, Attorney-General.

CANAL COMMISSIONERS.

[The Canal Commissioners have the general charge of the public works, of the construction of new canals, and of the repairs of the completed canals.]

Oliver Bascom, Whitehall, in charge of Division No. 1, viz: The Erie canal from Albany, including Albany basin, to east bank of the Oneida Lake canal; Champlain canal; Glen's Falls feeder, and the Black River canal and feeder, and improvement of Black river reservoir; 315 miles.

Stephen T. Hayt, Corning, in charge of Division No. 2, viz: The Erie canal from the east bank of the Oneida Lake canal to the east line of the county of Wayne, including the several feeders; Oswego canal; Cayuga and Seneca canal; Cayuga inlet; Chenango canal; Seneca river towing-path; Oneida river improvement; Chemung canal and feeder; Crooked Lake canal; Oneida Creek feeder; Oneida Lake canal; Baldwinsville canal; 329 miles.

John D. Fay, Rochester, in charge of Division No. 3, viz: The Erie canal from the east line of the county of Wayne to Buffalo, including the basins at Buffalo, and the Genesee Valley canal; 280 miles.

STATE ENGINEER AND SURVEYOR.

Van Rensselaer Richmond prescribes duties of, and assigns divisions of canals to engineers; visits and inspects canals; prepares surveys, maps, plans, estimates, &c., in the construction or improvement of a canal, &c., &c.

THE CANAL BOARD.

The Canal Board consists of the Commissioners of the Canal Fund, the State Engineer and Surveyor, and the Canal Commissioners.

Meets at the Canal Department during the sitting of the Legislature; fixes the rates of toll; appoints the engineers, superintendents of repairs, collectors of tolls, weighmasters, their assistants, and inspectors and measurers of lumber and timber, and of boats and their cargoes; and directs extraordinary repairs; hears appeals from the Canal Appraisers; remits penalties, and regulates the police of the canals, &c.

Contracting Board.

The Board consists of the Canal Commissioners, the Auditor of the Canal Department, and the State Engineer and Surveyor.

Meets in the office of the Canal Commissioners. This Board makes contracts on behalf of the State for work and materials for the enlargement and completion of the canals, and for the ordinary repairs of the canals.

Canal Department.

Rooms in the State Hall, in which the business of the Commissioners of the Canal Fund and the Canal Board, and the business of the Auditor of the Canal Department, is required by law to be transacted.

James A. Bell, Auditor. [Invested with the powers and duties formerly belonging to the Comptroller, in relation to the canals; draws warrants on the Treasurer for all canal payments; audits all canal accounts; instructs canal collecting and disbursing officers; keeps account of canal receipts and expenditures, &c.; *ex officio* secretary of the Commissioners of the Canal Fund and of the Canal Board, and a member of the Contracting Board.]

Canal Appraisers.

[They appraise the damage to individuals growing out of the construction of the canals. Office, State Hall, Albany.] Beman Brockway, William Wasson, Elijah P. Brooks.

Collectors of Toll.

Erie Canal.—New York, Charles F. King; Albany, William C. Marshall; West Troy, Allen Corey; Schenectady, George T. Castle; Fultonville, Horace Van Evera; Little Falls, Henry Whittemore; Utica, Joseph Faass; Rome, John J. Bradt; Syracuse, Wakeman G. Sprague; Montezuma, Garret Forshee; Palmyra, Henry S. Flower; Rochester, Nathaniel Thompson; Brockport, Alex. P. Butts; Albion, Patrick Glenn; Medina, John R. Weld; Lockport, John A. Wolcott; Tonawanda, Paul Roberts; Buffalo, George Talbot.

Champlain Canal.—Waterford, Courtlandt Brewster; Fort Edward, James R. Gandall; Whitehall, Washington I. Smith.

Oswego Canal.—Salina, Frederick Ganier; Phœnix, Enoch S. Brooks; Oswego, James Doyle.

Cayuga and Seneca Canal.—Geneva, Stephen H. Parker.

Chemung Canal.—Watkins, Abram Barkley; Horseheads, Chester W. Ryant; Corning, Frank B. Brown.

Crooked Lake Canal.—Penn Yan, Eli McConnell.

Chenango Canal.—Hamilton, James Thompson; Oxford, Frederick B. McNeil; Binghamton, Edward H. Freeman.

Genesee Valley Canal.—Mount Morris, Augustus Conkey; Dansville, Frank Eschnich; Caneadea, Julius F. Westbrook; Olean, Robert H. Renwick.

Black River Canal.—Boonville, Charles G. Bamber; Lyon's Falls, Jas. P. Hodgkins.

Superintendents.

Erie Canal.—In charge of Section No. 1, Thomas Kearney, Albany; No. 2, Abraham Vedder, Schenectady; No. 3, James Shanahan, Tribes Hill; No. 4, Reuben C. Petrie, Little Falls; No. 5, Giles Hawley, Rome; No. 7, Thomas Mulhall, Verona; No. 8, Philip P. Midler, Syracuse; No. 9, William Jones, Port Byron; No. 10, Wm. F. Ashley, Lyons; No. 11, Matthew Rigney, Rochester; Nos. 12 and 13, Chas. A. Danolds, Albion; No. 14, Frank B. Gallagher, Buffalo.

Champlain Canal.—In charge of Section No. 1, George L. Ames, Schuylerville; No. 2, George B. Sherill, Sandy Hill; No. 3, George Northrup, Comstock's Landing.

Oswego Canal—In charge of Section No. 1 and 2, James Caldwell, Fulton.

Cayuga and Seneca Canal.—Franklin Gage, Waterloo.

Chemung Canal and Feeder.—George O. Hanlon, Elmira.

Crooked Lake Canal.—Edward R. Randall, Penn Yan.

Chenango Canal.—In charge of Section No. 1, Gideon Wilbur, Hamilton; No. 2, Chas. W. Olendorf, Norwich; No. 3, Justus B. Wilmot, Owego.

Genesee Valley Canal.—In charge of Section No. 1, John H. Jones, Moscow; No. 2, Horace Hunt, Hunt's Hollow; No. 3, Wm. A. Kirkpatrick, Cuba.

Black River Canal.—In charge of Section No. 1, John Cole, Boonville; No. 2, R. Sanford Miller, Constableville; No. 3, Alexander Brown, Carthage.

WEIGH MASTERS.

Albany, Bartholomew Judge; West Troy, Thomas Nugent; Utica, J. Augustus Allen; Syracuse, Joseph A. Hoffman; Rochester, Benjamin W. Fasset; Waterford, Thomas Vanderkar; Oswego, John A. Barry.

INSPECTORS AND MEASURERS OF LUMBER AND TIMBER, AND OF BOATS AND THEIR CARGOES.

New York, Wm. H. Rogers, John Pettit; Albany, George Hill, David Prest; West Troy, Thomas P. Richards, Patrick Regan; Utica, John Teefey; Syracuse, James McGurk; Rochester, Wm. D. Lines; Buffalo, John Walsh, Mathias Oswald; Oswego, Valentine Sayles, Nichoson Millis; Whitehall, Elliott Burdett.

TABLES

OF THE PRINCIPAL PLACES ON THE CANALS, AND THEIR DISTANCE FROM EACH OTHER.

A LIST of the principal places on the Canals, and their distances from each other, as adopted by the Canal Board.

ERIE CANAL.

NAME OF PLACE.	Albany.	West Troy.	Schenectady.	Fultonville.	Little Falls.	Utica.	Rome.	Syracuse.	Jordan.	Montezuma.	Lyons.	Palmyra.	Rochester.	Brockport.	Albion.	Medina.	Lockport.	Tonawanda.	Lower B. Rock.	Buffalo.
Adam's Basin	274	267	244	218	187	164	149	108	89	75	57	42	15	5	19	29	47	66	74	78
Albany	....	7	30	56	87	110	125	166	185	199	217	232	259	279	293	303	321	340	348	352
Albion	293	286	263	237	206	183	168	127	108	94	76	61	34	14	....	10	28	47	55	59
Auriesville	53	46	23	3	34	57	72	113	132	146	164	179	206	226	240	250	268	287	295	299
Belle Isle	172	165	142	116	85	62	47	6	13	27	45	60	87	107	121	131	149	168	176	180
Black Rock	349	342	319	293	262	239	224	183	164	150	132	117	90	70	56	46	28	9	1	3
Bolivar	152	145	122	96	65	42	27	14	33	47	65	80	107	127	141	151	169	188	196	200
Brighton	256	249	226	200	169	146	131	90	71	57	39	24	3	23	37	47	65	84	92	96
Brockport	279	272	249	223	192	169	154	113	94	80	62	47	20	....	14	24	42	61	69	73
Brockville	288	281	258	232	201	178	163	122	103	89	71	56	29	9	5	15	33	52	60	64
Brockways	269	262	239	213	182	159	144	103	84	70	52	37	10	10	24	34	52	71	79	83
Buffalo	352	345	322	296	265	242	227	186	167	153	135	120	93	73	59	49	31	12	4	....
Bushnell's Basin	248	241	218	192	161	138	123	82	63	49	31	16	11	31	45	55	73	92	100	104
Camillus	175	168	145	119	88	65	50	9	10	24	42	57	84	104	118	128	146	165	173	177
Canajoharie	68	61	38	12	19	42	57	98	117	131	149	164	191	211	225	235	253	272	280	284
Canastota	145	138	115	89	58	35	20	21	40	54	72	87	114	134	148	158	176	195	203	207
Canaseraga Landing	150	143	120	94	63	40	25	16	35	49	67	82	109	129	143	153	171	190	198	202
Canton	180	173	150	124	93	70	55	14	5	19	37	52	79	99	113	123	141	160	168	172
Cartersville	250	243	220	194	163	140	125	84	65	51	33	18	9	29	43	53	71	90	98	102
Centreport	192	185	162	130	105	82	67	26	7	7	25	40	67	87	101	111	129	148	156	160
Chittenango	151	144	121	95	64	41	26	15	34	48	66	81	108	128	142	152	170	189	197	201
Clyde	210	203	180	154	123	100	85	44	25	11	7	22	49	69	83	93	111	130	138	142
Cohoes	11	4	19	45	76	99	114	155	174	188	206	221	248	268	282	292	310	329	337	341
Cold Spring	186	179	156	130	99	76	61	20	1	13	31	46	73	93	107	117	135	154	162	166
Cooley's Basin	277	270	247	221	190	167	152	111	92	78	60	45	18	2	16	26	44	63	71	75
Crescent	14	7	16	42	73	96	141	152	171	185	203	218	245	265	279	289	307	326	334	338
Dunbarton	136	129	106	80	49	26	11	30	49	63	81	96	123	143	157	167	185	204	212	216
Durhamville	140	133	110	84	53	30	15	26	45	59	77	92	119	139	153	163	181	200	208	212
Eagle Harbor	296	289	266	240	209	186	171	130	111	97	79	64	37	17	3	7	25	44	52	56
East Arcadia	220	213	190	164	133	110	95	54	35	21	3	12	39	59	73	83	101	120	128	132
East Canada Creek	82	75	52	26	5	28	43	84	103	117	135	150	177	197	211	221	239	258	266	270
Fairport	244	237	214	188	157	134	119	78	59	45	27	12	15	35	49	59	77	96	104	108
Fort Plain	71	64	41	15	16	39	54	95	114	128	146	161	188	208	222	232	250	269	277	281
Frankfort	101	94	71	45	14	9	24	65	84	98	116	131	158	178	192	202	220	239	247	251
Fullam's Basin	245	238	215	189	158	135	120	79	60	46	28	13	14	34	48	58	76	95	103	107
Fultonville	56	49	26	....	31	54	69	110	129	143	161	176	203	223	237	247	265	284	292	296
Fergusons	106	99	76	50	19	4	19	60	79	93	111	126	153	173	187	197	215	234	242	246

Gaine's Basin	295	288	265	239	208	185	170	129	110	96	78	63	36	16	2	8	26	15	53	57
Gasport	315	308	285	259	228	205	190	149	130	116	98	83	56	36	22	12	6	25	33	37
Geddes	168	161	138	112	81	58	143	2	17	31	49	64	91	111	125	135	153	172	180	184
Greece (six mile grocery)	266	259	236	210	179	156	141	100	81	67	49	34	7	13	27	37	55	74	82	86
Higginsville	135	128	105	79	48	25	10	31	50	64	82	97	124	144	158	168	186	205	213	217
Hindsburgh	289	282	259	233	202	179	164	123	104	90	72	57	30	10	4	14	32	51	59	63
Hoffman's Ferry	40	33	10	16	47	70	85	126	145	159	177	192	219	239	253	263	281	300	308	312
Holley	284	277	254	228	197	174	159	118	99	85	67	52	25	5	9	19	37	56	64	68
Hulberton	287	280	257	231	200	177	162	121	102	88	70	55	28	8	6	16	34	53	61	65
Ilion	98	91	68	42	11	12	27	68	87	101	119	134	161	181	195	205	223	242	250	254
Jordan	185	178	155	129	98	75	60	19	...	14	32	47	74	94	108	118	136	155	163	167
Junction	7	...	23	49	80	103	118	159	178	192	210	225	252	272	286	296	314	333	341	345
Kirkville	155	148	125	99	68	45	30	11	30	44	62	77	104	124	138	148	166	185	193	197
Knappsville	241	234	211	185	154	131	116	75	56	42	24	9	18	38	52	62	80	99	107	111
Knowlesville	299	292	269	243	212	189	174	133	114	100	82	67	40	20	6	4	22	41	49	53
Lenox	143	136	113	87	56	33	18	23	42	56	74	89	116	136	150	160	178	197	205	209
Limestone Feeder	159	152	129	103	72	49	34	7	26	40	58	73	100	120	134	144	162	181	189	193
Little Falls	87	80	57	31		23	38	79	98	112	130	145	172	192	206	216	234	253	261	265
Lock Berlin	214	207	184	158	127	104	89	48	29	15	3	18	45	65	79	89	107	126	134	138
Lockport	321	314	291	265	234	211	196	155	136	122	104	89	62	42	28	18	....	19	27	31
Lockville	223	216	193	167	136	113	98	57	38	24	6	9	36	56	70	80	98	117	125	129
Lock No. 65	253	246	223	197	166	143	128	87	68	54	36	21	6	26	40	50	68	87	95	99
Lodi	165	158	135	109	78	55	40	1	20	34	52	67	94	114	128	138	156	175	183	187
Loomis	137	130	107	81	50	27	12	29	48	62	80	95	122	142	156	166	184	203	211	215
Lower Black Rock	348	341	318	202	261	238	223	182	163	149	131	116	89	69	55	45	27	8	...	4
Lyons	217	210	187	161	130	107	92	51	32	18		15	42	62	76	86	104	123	131	135
Mabees	314	307	284	258	227	204	189	148	129	115	97	82	55	35	21	11	7	26	34	38
Macedon	236	229	206	180	149	126	111	70	51	37	19	4	23	43	57	67	85	104	112	116
Manlius	158	151	128	102	71	48	33	8	27	41	59	74	101	121	135	145	163	182	190	194
Martinsville	336	329	306	280	249	226	211	170	151	137	119	104	77	57	43	33	15	4	12	16
Medina	303	296	273	247	216	193	178	137	118	104	86	71	44	24	10	....	18	37	45	49
Middleport	309	302	279	253	222	199	184	143	124	110	92	77	50	30	16	6	12	31	39	43
Millards	318	311	288	262	231	208	193	152	133	119	101	86	59	39	25	15	3	22	30	34
Mindenville	78	71	48	22	9	32	47	83	107	121	139	154	181	201	215	225	243	262	270	274
Mohawk	95	88	65	39	8	15	30	71	90	104	122	137	164	184	198	208	226	245	253	257
Montezuma	199	192	169	143	112	89	74	33	14	...	18	33	60	80	94	104	122	141	149	153
Newark	224	217	194	168	137	114	99	58	39	25	7	8	35	55	69	79	97	116	124	128
New Boston Landing	149	142	119	93	62	39	24	17	36	50	68	83	110	130	144	154	172	191	199	203
New London	131	124	101	75	44	21	6	35	54	68	86	101	128	148	162	172	190	209	217	201
Nine Mile Creek	174	167	144	118	87	64	49	8	11	25	43	58	85	105	119	129	147	166	174	178
Orangeport	316	309	286	260	229	206	191	150	131	117	99	84	57	37	23	13	5	24	32	36
Oriskany	117	110	87	61	30	7	8	49	68	82	100	115	142	162	176	186	204	203	231	235
Orville Feeder	161	154	131	105	74	51	36	5	24	38	56	71	98	118	132	142	160	179	187	191
Palmyra	232	225	202	176	145	122	107	66	47	33	15	...	27	47	61	71	89	108	116	120
Pendleton	328	321	298	272	241	218	203	162	143	129	111	96	69	49	35	25	7	12	20	24
Peru	182	175	152	126	95	72	57	16	3	17	35	50	77	97	111	121	139	158	166	170
Pickardsville	333	366	303	277	246	223	208	167	148	134	116	101	74	54	40	30	12	7	15	19
Pitt Lock	205	198	175	149	118	85	80	39	20	6	12	27	54	74	88	98	116	135	143	147
Pittsford	251	244	221	195	164	141	126	85	66	52	34	19	8	28	42	52	70	89	97	101
Pool's Brook	154	147	124	98	67	44	29	12	31	45	63	78	105	125	139	149	167	186	194	198
Port Byron	194	187	164	138	107	84	69	28	9	5	23	38	65	85	99	109	127	146	154	158

Erie Canal—(Continued).

NAME OF PLACE.	Albany.	West Troy.	Schenectady.	Fultonville.	Little Falls.	Utica.	Rome.	Syracuse.	Jordan.	Montezuma.	Lyons.	Palmyra.	Rochester.	Brockport.	Albion.	Medina.	Lockport.	Tonawanda.	Lower B. Rock	Buffalo.
Port Gibson	227	220	197	171	140	117	102	61	42	28	10	5	32	52	66	76	94	113	121	125
Port Jackson	46	39	16	10	41	64	79	120	139	153	171	186	213	233	247	257	275	294	302	306
Reynales' Basin	313	306	283	257	226	203	188	147	128	114	96	81	54	34	20	10	8	27	35	39
Rochester	259	252	229	203	172	149	134	93	74	60	42	27	....	20	34	44	62	81	89	93
Rome	125	118	95	69	38	15	....	41	60	74	92	107	134	154	168	178	196	215	223	227
Schenectady	30	23	....	26	57	80	95	136	155	169	187	202	229	249	263	273	291	310	318	322
Schoharie Creek	51	44	21	5	36	59	74	115	134	148	166	181	208	228	242	252	270	289	297	301
Shelby Basin	306	299	276	250	219	196	181	140	121	107	89	74	47	27	13	3	15	34	42	46
Spencerport	271	264	241	215	184	161	146	105	86	72	54	39	12	8	22	32	50	69	77	81
Spraker's	65	58	35	9	22	45	60	101	120	134	152	167	194	214	228	238	256	275	283	287
St. Johnsville	76	69	46	20	11	34	49	90	109	123	141	156	183	203	217	227	245	264	272	276
Sulphur Springs, G. Lock	326	319	296	270	239	216	201	160	141	127	109	94	67	47	33	23	5	14	22	26
Syracuse	166	159	136	110	79	56	41	....	19	33	51	66	93	113	127	137	155	174	182	186
Tonawanda	340	333	310	284	253	230	215	174	155	141	123	108	81	61	47	37	19	....	8	12
Upper Aqueduct	26	19	4	30	61	84	99	140	159	173	191	206	233	253	267	277	295	314	322	326
Utica	110	103	80	54	23	....	15	56	75	89	107	122	149	169	183	193	211	230	238	242
Wayneport	239	232	209	183	152	129	114	73	54	40	22	7	20	40	54	64	82	101	109	113
Weedsport	190	183	160	134	103	80	65	24	5	9	27	42	69	89	103	113	131	150	158	162
West Troy	7	....	23	49	80	103	118	159	178	192	210	225	252	272	286	296	314	333	341	345
Whitesboro'	114	107	84	58	27	4	11	52	71	85	103	118	145	165	179	189	207	226	234	238
Yatesville	62	55	32	6	25	48	63	104	123	137	155	170	197	217	231	241	259	278	286	290
York Mills	113	106	83	57	26	3	12	53	72	86	104	119	146	166	180	190	208	227	235	239

CHAMPLAIN CANAL.

NAMES OF PLACES.	DISTANCE FROM		
	Place to place.	Albany.	Whitehall.
Albany	0	0	73
West Troy	7	7	66
Junction	0	7	66
Waterford	3	12	61
Mechanicsville	8	20	53
Stillwater village	4	24	49
Bleecker's Basin	2	26	47
Wilbur's Basin	2	28	45
Van Dusen's Landing	5	33	40
Schuylerville	3	36	37
Saratoga Bridge	2	38	35
Fort Miller	3	41	32
Moses Kill	3	44	29
Fort Edward	5	49	24
Glen's Falls feeder	2	51	22
Baker's Basin	1	52	21
Smith's Basin	5	57	16
Fort Ann	4	61	12
Comstock's Landing	4	65	8
Whitehall	8	73	0

GLEN'S FALLS FEEDER—(*Champlain Canal*).

NAMES OF PLACES.	Distance from place to place.
Champlain canal	0
Sandy Hill	2
Glen's Falls	3
Head of the feeder	2
Head of the pond	5

From Junction to Whitehall	64
Length of Glen's Falls feeder	12
Length of pond above Troy dam	3
Total	79

CHENANGO CANAL.

NAMES OF PLACES.	DISTANCE FROM				
	Place to place.	Utica.	Hamilton.	Oxford.	Binghamton.
Utica	0	0	30	60	97
Road leading from New Hartford to Whitesboro'	3	3	27	57	94
Clinton	6	9	21	51	88
Deansville	5	14	16	46	83
Oriskany Falls	5	19	11	41	78
Solsville	3	22	8	38	75
Bouckville	2	24	6	36	73
Peck's Basin	2	26	4	34	71
Hamilton	4	30	0	30	67
Lebanon Factory	2	32	2	28	65
Earlville	4	36	6	24	61
Sherburne	5	41	11	19	56
North Norwich	4	45	15	15	52
Plasterville	2	47	17	13	50
Norwich	4	51	21	9	46
Oxford	9	60	30	0	37
Haynes's Mill	10	70	40	10	27
Greene	4	74	44	12	23
Forks	8	82	52	22	15
Pond Brook	2	84	54	24	13
Port Crane	5	89	59	29	8
Crocker's Mills	1	90	60	30	7
Binghamton	7	97	67	37	0

OSWEGO CANAL.

NAMES OF PLACES.	DISTANCE FROM		
	Place to place.	**Syracuse.**	**Oswego.**
Syracuse	0	0	38
Salina	2	2	36
Liverpool	3	5	33
Mud Lock	2	7	31
Cold Spring	1	8	30
New Bridge	5	13	25
Three River Point	2	15	23
Phœnix	2	17	21
Sweet's Lock	3	20	18
Ox Creek	2	23	15
Fulton	4	27	11
Braddock's Rapid	4	31	7
Tiffany's Landing	4	35	3
High Dam	1	36	2
Oswego	2	38	0

CAYUGA AND SENECA CANAL.

NAMES OF PLACES.	DISTANCE FROM		
	Place to place.	**Montezuma.**	**Geneva.**
Montezuma	0	0	21
Seneca River	5	5	16
S. Dermont	2	7	14
Seneca Falls	3	10	11
Chamberlain's Mills	2	12	9
Waterloo	2	14	7
Teal's	5	19	2
Geneva	2	21	0
Lateral canal to E. Cayuga village, 2 miles	2		

CHEMUNG CANAL.

NAMES OF PLACES.	DISTANCE FROM			
	Place to place.	**Seneca Lake.**	**Elmira.**	**Knoxville.**
Seneca Lake	0	0	23	33
Havana	4	4	19	29
Millport	6	10	13	23
Horseheads	7	17	6	16
Elmira	6	23	0	22
Knoxville	22	33	22	0
FEEDER. (*Chemung Canal.*)				
Horseheads	0	17	6	16
Miller's Basin	7	24	13	9
Dam at Head of Feeder	7	31	20	2
Knoxville	2	33	22	0

CROOKED LAKE CANAL.

NAMES OF PLACES.	DISTANCE FROM		
	Place to place.	**Seneca Lake.**	**Crooked Lake.**
Dresden	0	0	8
Mallory's	0	3	5
Andrews and Ways	2	5	3
Penn Yan	2	7	1
Crooked Lake	1	8	0

GENESEE VALLEY CANAL.

NAMES OF PLACES.	Distance from place to place.	DISTANCES FROM.								
		Rochester.	Scottsville.	Mount Morris.	Nunda.	Portageville.	Oramel.	Cuba.	Olean.	Dansville.
Rochester	0	0	12	37	51	59	78	93	107	52
Rapids (Lock No. 1)	2	2	10	35	49	57	76	91	105	50
Tone's Basin	6	8	4	29	43	51	70	85	99	44
Scottsville	4	12	0	25	39	47	66	81	95	40
Canawaugus (Avon Road)	8	20	8	17	31	39	58	73	87	32
Sackett's Basin	2	22	10	15	29	37	56	71	85	30
Fowlerville Road	2	24	12	13	27	35	54	69	83	28
Barclay's Mill	2	26	14	11	25	33	52	67	81	26
Tiffardinia	3	29	17	8	22	30	49	64	78	23
Spencer's Basin	1	30	18	7	21	29	48	63	77	22
Tracy's Basin	2	32	20	5	19	27	46	61	75	20
Cuylerville	1	33	21	4	18	26	45	60	74	19
Leicester (Moscow Landing)	1	34	22	3	17	25	44	59	73	18
Genesee River Dam	2	36	24	1	15	23	42	57	71	16
Mount Morris	1	37	25	0	14	22	41	56	70	15
Shaker Settlement	4	41	29	4	10	18	37	52	66	11
Brushville	5	46	34	9	5	13	32	47	61	16
Nunda	5	51	39	14	0	8	27	42	56	21
Messenger's Hollow	2	53	41	16	2	6	25	40	54	23
Genesee Falls (Tunnel Section)	4	57	45	20	6	2	21	36	50	27
Portageville	2	59	47	22	8	0	19	34	48	29
Lock No. 61	5	64	52	27	13	5	14	29	43	34
Mixville Landing (Wiscoy Feeder)	1	65	53	28	14	6	13	28	42	35
Fillmore	4	69	57	32	18	10	9	24	38	39
Burrville	6	75	63	38	24	16	3	18	32	45
Caneadea Centre	1	76	64	39	25	17	2	17	31	46
Oramel	2	78	66	41	27	19	0	15	29	48
Belfast	2	80	68	43	29	21	2	13	27	50
Rockville	3	83	71	46	32	24	5	10	24	53
Caseville	1	84	72	47	33	25	6	9	23	54
Black Creek Corners	4	88	76	51	37	29	10	5	19	58
Cuba	5	93	81	56	42	34	15	0	14	63
Ischua Feeder	6	99	87	62	48	40	21	6	8	69
Hinsdale	1	100	88	63	49	41	22	7	7	70
Olean	7	107	95	70	56	48	29	14	0	77
DANSVILLE BRANCH.										
Shaker Settlement	0	41	29	4	10	18	37	52	66	11
Fitzhugh's Basin	2	43	31	6	12	20	39	54	68	9
Kyserville	1	44	32	7	13	21	40	55	69	8
Rock Spring	2	46	34	9	15	23	42	57	71	6
Sherwood's Landing	1	47	35	10	16	24	43	58	72	5
Steam Saw Mill	1	48	36	11	17	25	44	59	73	4
McNair's Landing	1	49	37	12	18	26	45	60	74	3
Woodville	1	50	38	13	19	27	46	61	75	2
Cumminsville	1	51	39	14	20	28	47	62	76	1
Dansville	1	52	40	15	21	29	48	63	77	0

DANSVILLE SIDE CUT — (*Genesee Valley Canal*).

NAMES OF PLACES.	Distance from place to place.
Shaker Settlement (Junction)	0
Fitzhugh's Basin	2
Kyserville	1
Rockspring	2
Sherwood's Landing	1
Steam Saw Mill	1
McNair's Landing	1
Woodville	1
Cumminsville	1
Dansville	1